

VERSES FROM THE HOLY QUR'ĀN AND THE FACTS OF SCIENCE



DR. HALUK NURBAKI



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VERSES FROM THE HOLY KORAN AND THE FACTS OF SCIENCE

By Oncologist
DR. HALUK NURBAKI
Radiotherapy-Radiobiology Specialist

Translated by:
METIN BEYNAM

INDUS PUBLISHING CORPORATION
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**IN THE NAME OF GOD, THE
COMPASSIONATE, THE MERCIFUL**

PREFACE

While the daily progress of technology and civilization has brought many comforts and benefits to mankind, it has also produced various problems in its wake. Even though contemporary man is more comfortable in comparison with past ages, it is not possible to claim that he is happier. Mental strain arising from socioeconomic causes, psychological and spiritual stress wear him down and make him restless. He lives together with the entire world in his own home, feeling the whole world's burden of suffering and pain on his back. Even in some ultraconservative families, who proudly claim they have never gone to a movie, the TV set occupies the dominant position in the household, majestically continuing its reign.

Rapid communications, annoying and noisy lights usher away the calm, thinking, feeling human being: Such an environment precludes the birth and development of exceptional intelligence, of great minds. Contemporary man has little time to read, let alone books of large volume. He consoles himself by watching and listening.

Our handbook series is intended to introduce the reader to subjects of psychic and spiritual value, in brief but also in essence, aiming at factual coverage. We shall count ourselves fortunate if we are able to contribute to the contemplative life through such publications. We wish for the help of God in this endeavor.

**THE TURKISH
FOUNDATION FOR RELIGION**

INTRODUCTION

If all the human beings in the world were to attempt to describe the greatness of the Glorious Koran for all their lives, they would still be unable to do so. The Koran is the *Logos* secret of divine art.

When our Beloved Prophet was asked: "Messenger of God, every prophet has a miracle. What is yours?", he answered: "The Word of God." The *Logos* secret is a mystery specific to the Glorious Koran. For the *Logos* is not just ordinary talk or communication: It is the embodiment of a living truth in a single word.

For this reason, all the verses of the Koran are enwrapped in the mystery of "the Living". They are always vital; they live. Beings are enabled to live through this mystery of God. Unless this wisdom is appreciated, and this is no easy task, it is not possible to understand the Koran.

All writings except the Koran are doomed to wane and to lose their validity. Everything is finite. The truth is emerging that the Koran is more alive and everlasting with each passing day. Its scientific wisdom is, as it were, rejuvenated with the passage of time. Although its verses are

always alive, our eyes are able to perceive their secret only within time. Every generation discovers their wisdom anew. Doubtless this will be true for future generations as well.

The meaning of a verse may be compared to a rosebud: it is hidden by successive layers of petals. A new meaning is perceived as each petal unfolds. For this reason, the verses have many different interpretations and meanings. It is quite incorrect to assign a single interpretation to the Koran's verses and to claim that that is the only possible meaning. It is more appropriate to use permissive expressions in interpretation — for example, "one meaning of the verse is such - and - such."

Before proceeding with the explanation of the verses I shall interpret in this book, I find it useful to remind the reader of certain points which should be borne in mind where the meaning and interpretation of Koranic verses are concerned. First of all, I would like to draw your attention to the subtle nuance between the "meaning" and the "interpretation" of the verses. "Meaning" is an act of translation; that is, it is the task of translating from one language directly into another. On the other hand, "interpretation" is the activity of explanation and explication within a wider context.

The following points need to be kept in view while translating Koranic chapters and verses into other languages:

1. Translation should be made in accordance with the rules of both languages. Interpretations should not be included in the text.

2. A word whose precise correlate does not exist should not be expressed by the second-best choice. The

original should be preserved as is, and explained in the interpretation section.

3. If a word with several meanings has been translated in only one of its senses, the others must also be treated in the explanatory section. Utmost care should be taken to avoid forced explanations and contrivances, even when these are well-intentioned, for the Word of God cannot tolerate the slightest distortion.

The most reliable of interpretations is the one made by recourse to other verses, to the Prophet's sayings ('Traditions'), or to the words of the Prophet's Companions. The etymological and grammatical principles of the Arabic language are also important sources, as are the rules of rhetoric and eloquence. The sources listed may nevertheless prove insufficient in interpreting certain verses. This is where scientific advances and technological inventions will provide the path of greatest illumination.

Many verses of the Glorious Koran dealing with the physics of the cosmos have neither been published collectively, nor has a satisfactory explanation been provided for them. In order to partially fulfill this difficult task, it has a satisfactory explanation been provided for them. In order to partially fulfill this difficult task, it has occurred to me to compile the interpretations of 50 verses which I have been preparing for many years in five books of ten verses each.

Following a review of all major publications in the fields of contemporary physics and astrophysics, I have tried to present the reliable scientific facts side by side with the Koran's scientific miracles to the reader. In relating the most recent and involved issues in the fields of physics and astrophysics (the "physics of the cosmos"), I have found further simplification impossible at certain points. I hope to

be excused by my readers. This is an inevitability imposed by the very nature of the subject.

My sole purpose is to share my knowledge with my brethren. I ask the forgiveness of my readers for any mistakes of interpretation. Our exalted Book is far beyond any flaw: If there are omissions and mistakes, they are mine alone. I begin by taking refuge in the bounty and mercy of God, the Lord of Universe.

May God grant us all the behavior deserving of his favor.

A SUBTLETY OF THE KORAN:
THE SECRETS OF THE ATMOSPHERE

●

ثُمَّ أَسْتَوَىٰ إِلَى السَّمَاءِ وَهِيَ دُخَانٌ فَقَالَ لَهَا وَ
لِلْأَرْضِ ائْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَا أَتَيْنَا
طَائِعِينَ ﴿١١﴾

Then, turning to the nebulous heaven, He said to it
and the globe (the earth): "Come, whether
willingly or unwillingly." They both said: "We
come willingly..."

A SUBTLETY OF THE KORAN: THE SECRETS OF THE ATMOSPHERE

Before we begin to interpret this verse, I would like to refer briefly to the Chapter of Detailed Explanations. As everyone knows, the Detailed Explanations Chapter is the second of the chapters in the Koran beginning with the letters "H" and "M". It is an important chapter that was recited frequently by our Beloved Prophet.

The great philosophers and scholars of Islam have informed us in their works that the seven "H-M"'s in the Koran contain many secrets relating to the universe. It has been explained that the seven "H-M"'s introduce a special secret of interpretation to the seven verses of the opening Chapter.

This 11 th Verse we shall interpret follows the 10 th Verse explaining the creation of the world, and bears many significant physical subtleties with regard to Genesis. Of course, as with all other verses, this verse also has many interpretations and divine meanings. I shall try to explain the secret this verse contains from the point of view of geophysics.

Let us now try to collate the important points in our minds by reading the verse several times over. In doing so,

we must note with care those definitions lying beyond the ordinary in the declarations of the Lord God. I would like to draw the attention of the reader to these points in what follows.

a) *"Then He turned to the nebulous heaven."*

This expression discloses a special secret. For when the Lord God wishes something, He simply says "*Be*", and it is. Why does the verse specifically indicate that *"He turned to the sky"*? It is drawing our attention to the fact that an important scientific insight is about to be revealed.

b) He sends out a call for cooperation to the earth and the heaven. He orders them to *"come and cooperate with each other, whether you like it or not."* Again, in the power of the Lord God and the certainty of His commands, there can be no such thing as the insubordination of the created. The command *"cooperate, even if unwillingly"* indicates that there is difficulty in the cooperation of the earth and its heaven. Further, it is indicated that the heaven which harmonizes with the earth is the one closest to the earth.

Let us now investigate the relationship between the earth and its "closest heaven" in terms of the precepts of contemporary geophysics. Until quite recently, it used to be assumed that life would originate on any planet having the proper temperature. In recent years, however, space explorations have revealed that the possession of an atmosphere is one of the most difficult things for a planet to achieve. In other words, there is a baffling opposition between a planet and its atmosphere (which might be called its "nearest heaven"). For the atmosphere consists of gaseous atoms in the "near sky". In all large planets these atoms are assimilated to the surface of the planet, while in small planets the gravitational force is insufficient to bind the atoms. These gases then escape, leaving the planet barren.

Now let us reread the sacred verse in the light of this very brief information, and in particular the second sentence:

"Come, both of you, come together willingly or unwillingly."

The molecules and atoms in the atmosphere try to escape into space, while the earth tries to attract and captivate them. In other words, their partnership is unwilling; it is forced.

The scientific magnificence of this sacred verse consists in the fact that it is telling us this secret 14 centuries in advance. 50 years ago no one was aware of this fact.

In order to divine the inner meaning of the sacred verse, let us expand our knowledge of geophysics a little further. What are the conditions for the formation of an atmosphere on a planet and so, by implication, on earth?

For the formation of an atmosphere, the motions leading to the escape of molecules have to be counterbalanced by the gravitational attraction of the earth. This is an almost impossibly difficult condition to fulfill. For all planets throughout the universe, the odds may be less than a billion to one. This is the fact that the chapter "Detailed Explanations" expresses.

"And then He turned to the heaven."

This statement contains the secret of how the Lord God mediates this impossibility. From the standpoint of geophysics, these extremely difficult conditions require the preservation of three important balances:

1. Atmospheric temperature,

2. Proportionate **gravitational** attraction on the part of the earth,

3. The nonviolation of this balance by various radiant energies arriving from space.

1. Atmospheric Heat:

The escape motions of molecules are dependent on heat. The environmental heat should obey the following detailed characteristics:

a) The distance of the earth to the sun. If the earth were closer to the sun, the heat produced in the environment of the atmosphere would cause all the molecules to "boil off" and escape. On the other hand, if the earth were farther away from the Sun, the molecular movements would slow down, the molecules would condense and be assimilated by the earth.

b) The heat the earth receives from the sun must be evenly distributed over the earth's atmosphere. For this the earth has to rotate on its axis with a definite velocity. If it rotated too slowly, sudden cooling would be absorbed by the surface in that region. If it were to rotate too fast, the various regions would not get the chance to be heated evenly.

The earth, therefore, must rotate at its present speed. However, this balanced rotation is likewise insufficient to dispose of the question of heating. For next the equator of the earth, which receives a larger portion of the sun's energy, begins to heat up, while the Poles cool even further leading to the condensation and absorption of the atmosphere at the Poles. So the axis of the earth must remain tilted, balancing the heated regions by continually

interchanging them. This is why the axis of the earth is slanted 23.5 degrees.

The declaration *"they said, 'we come willingly'"* at the end of the sacred verse gives expression to this inner meaning, God's order, *"cooperate, come together"*, points simultaneously to the automatic inclination of the earth and its possession of a moderate rotation. For the earth, too, takes the appropriate physical measures demanded of it by the command.

c) The earth has to retain the heat it gains, to store it for a certain period, In other words, the earth needs a "blanket". This blanket is provided by the gaseous carbon dioxide in the air. But before the atmosphere had formed, where was the carbon dioxide to regulate the heating process? We know from geophysics that the initial atmosphere of the earth was composed primarily of carbon dioxide.

The sacred verse reveals this secret as well. What does *"It was a duhan (cloud of smoke)"* mean? It is known that in its initial period, the earth possessed an atmosphere consisting mostly of smoke (carbon dioxide). It was thanks to this primordial gas that the earth retained its heat and was able to form the atmosphere of today.

2. The Properly Proportioned Gravitation of the Earth:

Modern physics defines terrestrial gravitation as follows: The sum of the active gravitational forces of the atoms comprising the earth. This means that if the escape of the atmosphere is to be prevented by gravitation and its absorption avoided, the earth has to possess a definite volume and density, It can easily be seen that when the earth possesses a specific density and volume, the atmos-

phere can be constituted without difficulty. Unbelievable subtleties, however, underlie this event. We may list these as follows:

a) The earth has to contain certain materials in a definite proportion. It has to have sufficient metals in reserve to support the existence of life and civilization, and gas to comprise large amounts of nonmetals. This means that the density of the earth is not a crude but rather a very difficult calculation, involving the simultaneous consideration of many essentials.

b) The gravitational balance of the earth has to be constituted in such a way that while the atmospheric molecules are being balanced physically, they must also be chemically inert at the surface of the earth's crust, the soil, the mountains and oceans should not have a structure that would react with the atmospheric gases, which is equivalent to saying that it should not be absorptive of the atmosphere. For instance, if the earth's crust were made of carbon, it would both exhaust the oxygen through chemical reactions and would absorb the nitrogen, whereas in fact the earth's crust is comprised of silicon compounds with structures that leave them inert toward the inner shell of the atmosphere.

c) Two other significant points regarding the earth's gravity relate to matters of physical structure. Firstly, within the material density of the earth, the balanced distribution of magnetic materials such as iron has to be achieved. Further, the molten core at the center of the earth and the semimolten metals surrounding it must maintain equilibrium with the earth's crust.

We thus see that the gravitational balance of the earth requires many calculations; calculations of such magnitude

and finesse that they could only be evaluated by the vast program of a giant computer.

3. Inviolability of Atmospheric Equilibrium by Various Radiant Energies in Space:

No matter how harmonized it may be, there is such a torrential rain of particles from space that it can always alter the atmospheric equilibrium: It imparts violent velocities to molecules.

a) A magnetic field (the "magnetosphere") surrounds the earth, with a diameter equal to a hundred earth diameters. This field acts as a vast screen towards all particles and energies coming from space. This insight will be explained in detail in the interpretation of a separate verse.

b) Black holes are thought to be located at various distances to the earth. All excess energies emitted from within the Milky Way galaxy are absorbed by these centers of intense gravitation.

c) Further, the atmosphere protects itself within its own structure from the upper regions towards the lower. The filtering of particles in this protective screen is performed by the ozone layer. Isotopes of nitrogen also contribute to this protection.

It will readily be conceded that there are many things about the atmosphere that we don't yet know. What is important is that science discovers and bears witness to a fresh miracle of our great Creator each new day.

Such are the facts we find when we set out by inter-

preting the word "heaven" in Verse 11 as the sky of the earth in Verse 12.

It is also possible to take the word "heaven" in a general sense, and to approach its interpretation from a different angle. It is known that the Glorious Koran declares the existence of seven different heavens. We know very little about the spatial physics of these heavens; at present, we know nothing whatsoever about the dimensions and spaces involved. I shall explain what we know on this subject while interpreting the verse that deals with the seven different levels of heavens.

Now please reread the verse in the light of all these scientific facts. We are now in a much better position to appreciate what a wonderful marvel of science it embodies.

As for the main characteristics of the atmosphere, the escape velocity for any object or molecule is 11.3 kilometers per second. Normal atmospheric conditions are balanced with care as outlined above, so that atmospheric molecules cannot attain this speed.

According to Prof. De Lymak Spitser, the earth absorbs part of the atmosphere it requires, especially nitrogen. The active and violent nature of the oxygen in the atmosphere is counterbalanced by nitrogen. Furthermore, the gases we call "noble gases" (helium, argon, neon, krypton, xenon, radon), which prevent the combination of nitrogen and oxygen in the course of time and particularly during lightning strokes, are also present in the atmosphere in trace but optimal amounts. The atmosphere always maintains its nitrogen/oxygen balance in the proportion 5:1.

All these magnificent geophysical systems find their origin in the secrets revealed to us in this verse by God.

UNKNOWN LOCI OF THE UNIVERSE



فَلَا أُقْسِمُ بِمَوَاقِعِ النُّجُومِ ۖ وَإِنَّهُ لَقَسَمٌ لِّوَعْلَمُونَ
عَظِيمٌ ۖ — الواقعة ۝

"No. I swear by the positions (locations) of the stars.
And that is indeed a mighty oath. did you but know it."

UNKNOWN LOCI OF THE UNIVERSE

I would first like to present a short definition regarding the *Waqia* Chapter. *Waqia* means "fearful event." *Wuqu* is "occurrence", the sudden emergence of something. The majority of the interpretations have taken *waqia* to mean the Day of Judgement. However, the moment of death or any other awe-inspiring event conforms to the definition of *waqia*.

The way in which the words are situated and the sentence is formed in the verse are extremely interesting. Its commencement with the word *fa* grammatically indicates the combination and coverage of the entire verse by this word.

La's meaning here is:

- a) Harmony of the Word,
- b) Reinforcement,
- c) True particle of negation.

In this final sense, the meaning "there is no need for more words" comes through:

"There is no need for more words. I swear by the positions of the stars. And if you but knew, that is indeed a mighty oath."

What we want to underline in this verse is, of course, the expression "positions of the stars." In the old interpretations, there are many explanations in connection with stars. The ones related to astrophysics are as follows:

- a) The locations where they rise and set,
- b) Their Easts and Wests, their limits and loci,
- c) The points where meteors (shooting stars) appear,
- d) The points at which a star disappears.

Now, as before, let us summarize the subtleties of this sacred verse:

a) The oath begins with the particle of negation. This kind of beginning indicates that an extraordinarily important secret is about to be revealed, especially when it occurs together with *fa*.

b) The positions (locations) of the stars are sworn by, and in fact there are oaths of this type in other verses as well. However, an oath by the positions of the stars belongs to this verse alone.

It may be claimed that the Lord God has, in his divine wisdom, willed such an oath, and that there need not be anything out of the ordinary about it. However, the second verse belies such a conclusion:

c) *"If you but knew how great an oath it is."* This expression tells us that if we can but understand the concept of stellar locations, it will be seen to possess a very great and important inner meaning.

This is one of the verses that best demonstrate how the Koran can be reinterpreted as science advances in time.

Let us now summarize what the science of astrophysics has discovered in the last fifteen years in connection with the positions of stars.

There are locations in the universe called "star locations" by Russian scientists and "white holes" or "black holes" by "Western scientists. We have learned about stellar locations during the past fifteen years thanks to advances in the science of astrophysics.

Two kinds of stellar locations are found in the universe that do not have the properties of stars:

1. White holes (Quasars),
2. Black holes.

1. White Holes (Quasars):

This stellar location is a store of incredible amounts of energy. It is as though truly vast energies are emitted to distances of hundreds of thousands light years from certain points in the universe. A quasar possesses enough energy to form a galaxy (an assemblage of billions of stars). Some scientists view quasars as the seeds of galaxies.

2. Black Holes:

The more exciting of the two types are black holes. These holes signify the location left vacant by the demise of a star. But what happens when a star dies? Without knowing the answer to this question, it is impossible to comprehend these holes, i.e., the stellar locations described by the verse.

It is known that stars are composed of immense numbers of atoms. Electrons revolve around the nuclei of

atoms, and as a result the star possesses a definite volume. The death of a star means that the energy maintaining this volume is exhausted. As the star dies, it is compressed under the influence of its own gravitation until only the nuclei of atoms are left, and the star shrinks and contracts as the nuclei pile on top of one another. A dying star will shrink to several millionths of its original size without undergoing significant change in mass. If the dying star is a small one, say the size of our sun, it becomes a pulsar. A pulsar is an entity that emits X-rays every 0.03 seconds: It takes its name from these pulse-like emissions. The star revolves around itself at speeds of hundreds of millions of kilometers per hour, yet it has shrunk to such a small size that it cannot be seen. It is detectable only by its emission of a pulse-like beam. It thus becomes a perfect stellar location.

If the dying star is large, the gravitational collapse is so intense that it does not stop at the nuclear level, but continues until all the matter and energy is compressed into a point called a "singularity". This singularity constitutes a cosmic black hole. This hole cannot be seen in any way, and can only be recognized by the following properties:

1. It devours all radiation and stars passing nearby,
2. It causes the indirect emission of gamma rays and X-rays,
3. Time is suddenly dilated in its vicinity.

In other words, this black hole is the mysterious tomb of a star. It draws in and hides all material beings, including time, in its unknowability.

Prof. Remo Ruffini of Princeton was the first to theorize the existence of black holes. This scientist named these

points "star locations". Later, John A. Wheeler coined the term "black holes" for these locations.

From the physical point of view, these points are regions of gravitational shock or collapse. Anything approaching their vicinity is annihilated. Among Einstein's followers, Oppenheimer and Snyder have given these points a scientific interpretation, and have conceived these points as regions of equilibrium in the universe.

The balance of a star is maintained between the expansion due to nuclear reactions on the one hand, and intense gravitation the other. The billions upon billions of stars in the universe are all balanced within an incredibly computerized order. According to one view, nuclear reactions also serve as the seeds for galaxies in the form of quasars.

Let us now return to verse 75 of the "Event" Chapter.

"No, I swear by the locations of the stars. And that is indeed a mighty oath, did you but know it."

Also, let us recall our Beloved Prophet's saying related to this Chapter:

"Teach the Chapter of the Event to your children, and let them teach it to their children."

Isn't the divine miracle much clearer now? Learn this chapter, and consequently this verse, from generation to generation, and in the end you will see a very important secret of the universe unveiled.

The name of the chapter also has a divine bearing on the interpretation of this verse. We have tried above to interpret the verse only from the astrophysical point of view.

The multitude of beings in the universe, the secret of the billions upon billions stars which defy imagination and of the dimensions that shape them are likewise explained in the Koran, sometimes explicitly and sometimes covertly. It is only a question — and secret — of keeping "the Eye of the Heart" open toward the Koran. For instance, we may observe a pure-hearted believer, weeping, shed tears as this 75th Verse is being recited even though he doesn't know Arabic and has not studied physics. He may himself be unaware of his condition, but a secret has been disclosed to the Eye of the Heart through this divine sentiment by virtue of his purity.

TOPIC 3.

A NOBEL PRIZE-WINNING THEORY'S PLACE IN THE KORAN

●

سُبْحَانَ الَّذِي خَلَقَ الْأَزْوَاجَ كُلَّهَا مِمَّا تُثْبِتُ الْأَرْضُ
وَمِمَّنْ أَنْفُسُهُمْ وَمِمَّا لَا يَعْلَمُونَ ﴿٣٦﴾ — قِنْ

"Glory to God, exalted beyond all, Who created in pairs all things that the earth produces, as well as their own selves, and many other things of which you know nothing."

A NOBEL PRIZE-WINNING THEORY'S PLACE IN THE KORAN

As with the preceding verse interpretations, let us identify the messages imparted by the verse by reading the text several times.

a) God, after proclaiming the secret of "the Glorious" once again, declares that creatures embody the secret of paired existence. God Himself is beyond possessing a pair a likeness, or an equal. The reason the sacred verse begins in this way is to draw attention to the inner meaning of the pairwise existence of created beings.

Pairwise existence indicates opposition simultaneously with similarity. The most obvious example of this is male and female. The scientific definition of pair creation implies "similar opposites". Heat and cold also constitute a pair. That is, two things may be almost identical, yet opposed in their nature and influence.

b) The most interesting aspect of the verse is the examples of pairs it provides. Saying "We created beings in pairs", God gives three examples:

1. Pairs produced by the earth,
2. Pairs of selves,

3. Many other created pairs of which we have no knowledge.

In order to discover the secret of this verse, let us first see the conclusions science has reached in the light of recent research.

The discovery of the positron by the physicist Anderson may be regarded as a great turning point on contemporary physics. It was Maurice Dirac who first postulated parity (pairwise creation).

Parity ("parite" in French) is a basic principle of modern physics. Every particle in the universe has a certain charge and/or spin. When a particle is formed, its "opposite twin" or antiparticle is produced together with it, for beings are always created in pairs. The most famous of these are:

The positron, antiparticle of the electron;

The antiproton, antiparticle of the proton;

The antineutron, antiparticle of the neutron;

The antineutrino, antiparticle of the neutrino.

One of the basic principles of nuclear physics, therefore, is that every particle exists together with its opposite twin. We shall return to this subject in detail later on.

Hence, the 36th Verse has informed us of the basic law of creation 14 centuries ago in the declaration: *"I have created many unknown pairs."*

Let us now turn to the collective interpretation of the verse. With the expression *"Glory to God"* in the first sentence, the verse underlines the fact that God, and God

alone, is without equal or likeness. As we shall explain later on is the interpretation of the Chapter of Sincerity, our difficulty in knowing God stems from this secret of unequalled "Glory". The habit of analogy, of discerning a thing through its opposite, is rooted in our comprehension. But all beings that have opposites or similar partners are mortal or finite. God, on the other hand, is "the Glorious": He is without likeness and beyond all. He has, however, created beings in pairs (opposite partners).

1. Those the Earth Produces:

This part of the verse has been interpreted by some scholars as referring to the plant kingdom. This interpretation is, however, incomplete, for had God wished, He would not have said "all things that the earth produces", but "plants" directly. The verse certainly refers to the secret of opposing partners in plants as well, but the information expressed by the verse is not limited to the realm of plants alone.

This first category of the verse defines the limits of the third. If someone were to interpret the sentence: "*We have created many more pairs of which you have no knowledge*" as referring to electricity or magnetism, for instance, he would be mistaken, for this is a pair produced by the earth.

Pairs produced by the earth, then, may be listed as follows:

a) Similar pairs that differ in their physical and chemical characteristics, e.g. metals and nonmetals.

b) Biologically opposed pairs: The male and female sexes of plants and animals.

c) Physically opposed pairs:

Electrically opposed pairs: Positively and negatively charged ions, and hence the reversal of electric charge (polarity). .

Magnetically opposite pairs: The poles of a magnet referred to as North and South, respectively.

d) Phenomena of analysis and synthesis that alter the structure of life in the soil: The vivification of plants by the syntheses of bacteria that fix nitrogen, the destructive and dispersive effects of bacteria that break down organic materials and cause decay, and similar complementarities.

2. Pairs of Their Selves:

"We created pairs (opposite twins) of their own selves."

Various meanings are inherent in this part of the verse:

a) Man and woman (opposite partners).

b) Complementary personality traits (cruel/compassionate, brave/cowardly, generous/miserly, etc).

c) Traits which are similar but subject to opposed value judgements, such as barbarism/courage, hypocrisy/ consideration, placidity/naivete, etc. Some of these words are very difficult to explain and translate. For example, "hypocrisy" is to lie in return for some favor, or "flattery" as it is nowadays called, whereas "consideration" is treating a person gently and making concessions in order to guide that person to the truth. This subject, however, passes beyond the scope of this book and the main theme of our

interpretation, so we will leave it summarized as above without further discussion.

3. Pairs We Don't Know Of:

The law of parity covers all concepts of matter and energy, in the sense that quanta and the systems composed of them manifest themselves as opposite twins.

a) Processes of energy emission and absorption which physics and astrophysics have recognized only in recent times. We have yet to fathom the secret of these processes. However, we do know of black holes where energy is drained and annihilated, and of quasars which concentrate unbelievable amounts of energy. These two regions are places which appear as twins, but exert opposing influence with respect to each other.

b) Forces of attraction and repulsion and especially, gravitation counterbalanced by centrifugal force. If the opposition between these forces did not exist, all planets would either fall into their respective suns or be flung into outer space.

Gravitation and rotational motion together support a dazzling system of equilibrium in the universe. We encounter a mind-boggling harmony when we inspect this equilibrium from the standpoint of our earth and the universe. Besides forming the solar system together with the earth, the neighboring planets also strike a similar rotational balance with their own satellites. These smaller systems then complete a further revolution around the sun. Thus, the nine planets and their many satellites all revolve around the sun in different orbits. These heavenly objects thus avoid falling into the sun. In return, the sun balances these

planets in their orbits, preventing them from escaping into space. But this is not all. A further rotational motion is on the agenda, for the Milky Way galaxy to which we belong rotates on its axis together with our sun. This journey is completed in about 250 million years for each revolution.

Thus, we have discovered examples within the secret of the Koranic miracle of pairs we didn't know of till yesterday.

Our galaxy in turn is on an immense journey around the center of the cluster of galaxies to which we belong. Hence our earth, in an effort to maintain balance between all these pairs of attractive and repulsive forces, rotates in four different orbits on four different journeys that are finally measurable by a billion years.

TOPIC 4.

THE KORAN FORETELLS OIL

●

وَالَّذِي أَخْرَجَ الْمَرْعَىٰ ۖ فَجَعَلَهُ غُثَاءً أَحْوَىٰ ۖ
الاعلى..

“(Your Lord) who brought forth the pasturage,
then turned ut into a black gussa (floodwater).”

THE KORAN FORETELLS OIL

Reading these verses, a person who knows geology will immediately perceive that this sentence is describing oil. Of course, the important thing is that this information is provided in the Koran, sent down 14 centuries ago.

Let us once again read the verses several times, and then refresh our knowledge of geology, inadequate though it is. As everyone knows, the first flora on earth were the giant ferns and pastures of algae. These vast pastures, the forerunners of life on earth, were later pushed underground through great geological upheavals, and transformed into oil through a special process of chemical reduction. We shall see the details of this process in a moment.

The Chapter of the Most High was one of the favourite passages of our Beloved Prophet. It is even claimed that our Prophet recited this chapter in the last Prayer service he ever led. The Chapter of the Most High summarizes Genesis in clear and concise terms in its first five verses:

"(Your Lord) who created and gave form, (your Lord) who made everything in measure and showed the way."
(Chapter 87, Verses 2-3).

These verses are the basic laws of the creation of the

universe. It is worth noting that the verses of our present topic immediately follow, for the first period of life on earth is being explained.

Fields of ferns were the first of the vast pastures to be formed on earth. If these pastures had remained as they were, the oxygen in the atmosphere would have increased uncontrollably and the atmosphere would have ignited at some point.

In accordance with the measure and preordination explained in Verse 3, all this flora was buried underground after fulfilling its function. It was transformed into *gussa* (oil) under the influence of great geological events. Hence, subjects that could fill volumes have been summarized as major headings in these verses.

I would now like to briefly review some details related to these first geological periods of the earth. In the process, I shall also expose the extent to which atheists, who are adepts at obfuscation, distort facts and foster confusion.

The science of geology accepts that 5 billion years have elapsed since the primeval fireball stage of the Earth. This time has been divided into four classic eras, and these have then been subdivided extensively into various periods. The first, uncrusted, period of the earth is excluded from these four eras. This era (the Precambrian) is believed to have lasted 4.5 billion years.

The first era is estimated at half a billion years. In general, this was the age of giant flora, and petroleum was also formed in this age: There is general agreement that the second period lasted 170 million years and the third, 65 million years. The fourth period is recognized as pertaining to the present form of the earth, with a history of about 2.5 million years. Various methods are used for computing

these periods, as I shall explain below.

Oil was mainly formed by the decomposition of coastal ferns and algae trapped between rock strata through the action of various bacteria. Several theories exist about the formation and accumulation of oil, none of which has been proved unequivocally. It has been claimed that seaweed also played an important part in oil formation. Of course, this view would also conform with the sacred verse. These latter views on oil are more significant. According to these views, oil was formed by the decomposition of seaweed and the coastal algae and ferns, and then accommodated itself to the structure of geological strata, flowing as rivers to form subterranean lakes of oil. As a result, the remains of small sea animals can sometimes be found in oil beds.

Let us now reread the sacred verse:

"And then He turned it into black floodwater."

Yes, dear reader: according to conclusions reached only in our time, oil, which is a black fluid, flows in black subterranean rivers. "Floodwater" is the clearest expression describing this underground flow of oil. In addition, floodwater drags residues of humus, and so does oil. Hence, this verse has also informed us of the flow of oil rivers, called 'oil migration' in the industry, 14 centuries ago!

Since our purpose in this book is confined to scientific explanations, I shall not deal with the other verses of the Chapter of the Most High. However, I suggest that my readers should read and reread the "Most High" Chapter many times in its entirety. They will then be able to divine many other insights related to oil. If oil had not existed in Islamic countries and especially in the Middle East, where would Moslems be?

I would now like to speak of certain temporal controversies regarding the formation of the earth.

Various dates have been proposed concerning the unknown ages of our earth. Indeed, I myself have just given examples related to geological periods. The dates relating to these ages, however, are speculative in nature. Some are based on serious scientific investigations, while others are nonsense in the most precise sense of the term, being the vicious lies of confirmed atheists.

The geological dating of past ages is based on several methods. One of these involves the time necessary for the formation of the chemical structures of certain rocks. These are well-intentioned and reasonable estimates. The second method concerns radiocarbon dating. Actually, since comparison forms part of the methodology of physics, the results of radiocarbon dating ought to be definitive. There are, however, difficulties in its application, leading to spurious results. In particular, when the date to be estimated exceeds 50 thousand years, the outcome is guided more by prejudice than by physics.

The basis of this method is the physical decay period of radioactive carbon, also called its "half-life". The date of an underground event can be determined by recourse to the ratio of radioactive carbon remaining in that vicinity.

The half-life radioactive carbon, however, is 5570 years. This means that the carbon-14 remaining after about 22 thousand years is 6 % of the original amount, while this ratio drops to 4 parts in ten thousand for a period of around 63 thousand years. When one arrives at the level of millions of years, even the slightest error or variation in samples can result in discrepancies on the order of millions of years. It is due to this fact that the older chemical method is still pre-

ferred in estimating the duration of geological periods. The use of radioactive carbon is confined more to the dating of events in recent history.

No difficulty is involved in the estimation of geological periods. However, I would like to deal with the fictitious tales regarding the myth of human evolution, fabricated by materialists in abuse of the above scientific facts. It is an imperative duty for us to unmask those who pass off as science that which has no place in it; namely, the fictive projection of man's appearance on earth a million years earlier into the past.

Sensible scientists currently estimate man's history on earth at from 10,000 to 50,000 years. It is an atheistic invention to seek a human or ancestral species earlier than this. The clearest example of this in recent years can be seen in the scientific hoax called the *Pittdown man*. *

A human skull was displayed in England's famed British Museum in 1912. An inscription placed below it read: "Pittdown Man". The nameplate indicated that the skull belonged to a humanoid who lived five hundred thousand years ago, and that this humanoid was one of the ancestors of man. For 40 whole years this skull was the subject of debate; conferences were given and books written about; it provided a rich mine for unbelievers. However, after the development of the radiocarbon method, it was discovered that this skull belonged to a man, while its jaw was that of an ape. The man's cranium was 150 years old, whereas the ape's jawbone was 60 years old. This event was actually a scientific scandal of the first order. The skull was removed from the Museum. The diplomas of the professors who gave speeches and wrote books about the skull were not, however, revoked. Many of these or the descendants thereof are busily at work today, inventing new tales about other skulls in Africa.

Finally, I would like to take this opportunity to discuss several facts regarding time.

It used to be believed that time was simply a date on the calendar or a figure on the wristwatch. Today, two great scientists have brought physical clarity to the concept of time. Of these, Prof. Nikolai Kozyrev defines time as frozen energy, while Einstein has defined it as a dimension. The flow rate of time is different in various regions of the universe, and for objects moving with different speeds. This fact has been determined using the decay rates of cosmic rays, and comparing these with the distances they have traversed. Hence, even if geological estimates are correct, an important question remains unanswered: Was time flowing at the same rate in past ages, the durations of which are expressed in terms of millions or billions of years?

The answer is that this is very doubtful indeed. It is quite possible to conceive that time was flowing at an accelerated rate in those ages: Perhaps what we now call five billion years was two million years or less when compared to the present rate of flow of time. I shall explain this subject in greater detail when interpreting the miraculous verses of the Koran related to the flow of time.

In evaluating scientific subjects, the results of thought and experiment have to be taken in the context of the specific location in space and time to which they pertain. Atheistic researchers, however, usually take a manifestly scientific result, project it billions of years into the past, and arrive at preposterous conclusions on that basis. This error is frequently repeated in the case of space and the universe. For instance, many tales are invented concerning a star whose light has arrived from a distance of billions upon billions of kilometers, while in actual fact there may be many

different circumstances and events extinct at that distant point in space. Indeed, it is a well-known fact that a star may appear existent to us because its light is just arriving, even though it has perished a hundred thousand years ago.

In a similar vein, estimates as to when the world was created can never go beyond the level of conjecture. As a result, such pieces of information cannot be classified as theories or even as hypotheses. It is, of course, possible that vast time periods were indeed involved; still, we cannot ascertain the rate at which time flowed in those ages. As an aside, I would like to remind my readers that notions about the time span in which the earth and the universe were created can never contradict the Koran: The duration of the earth's Genesis and the time it took to reach its present condition are two different things. We shall return to these comparisons in future verses.

TOPIC 5.

THE MYSTERIES OF RAIN

●

وَالَّذِي نَزَّلَ مِنَ السَّمَاءِ مَاءً يُقَدِّرُ فَأَنْشُرْنَا بِهِ
بَلَدًا مَيِّتًا كَذَلِكَ تُخْرَجُونَ ۝ — الزمر ٢٣

“(He) sends down from the sky water in due measure;
We revived therewith a land that was dead;
even so shall you be brought forth.”

THE MYSTERIES OF RAIN

This sacred verse is extremely important from the viewpoint of atmospheric physics. A person living fifty years ago would have found nothing extraordinary in this verse.

The materialists of the 19th Century regarded rain as the simple precipitation of water vapor. Indeed, such was their frame of mind that they thought they would be able to produce rain in no time, ridiculing those who would pray for rain. At that time it wasn't known that the phenomenon of rain, i.e. the conversion of a cloud into rain, is not such a simple event after all. Since it was not possible to cross-examine atheistic scientists, the following questions went unanswered:

1) How could vapor, which is regarded as gaseous water, remain in the same form in atmospheric strata, such as the Siberian skies, where temperatures dropped to forty degrees below zero? Why didn't it fall as iceblocks on the heads of those who made such claims?

2) How did rain assume a certain drop size, and in what balance did this raindrop descend to earth? What were the preconditions for the formation of such agreeable, tranquil raindrops?

3) How did a cloud vaporize, and how and whence did the salt in the cloud come to be there, seeing that salt cannot be vaporized at the boiling point of water?

In the last twenty years, rational —if still only partial— answers have been found to these puzzling questions. Let us now reread the sacred verse, and identify its relevant points:

a) God regards rain as a physical event of the same order of significance as the resurrection of the dead. For this reason, He says: *"You will be brought forth from the earth just as I have brought down water from the sky in due measure."*

b) In defining rain, the Koran has described it as a carefully measured descent of water, also using the word "measure" in the form *biqadarin*. This word is the expression of an ordered, calculated measure: It is the definition of a mathematical program.

c) *"The rain gives life to a dead land."* This expression, which constitutes the central portion of the verse, is likewise no ordinary statement. This is why it is said: *"We gave life to a dead land"*, and not *"plants emerge from it"*. We shall shortly be investigating these inner meanings.

Hence, the sacred verse collectively contains secrets that are marvels of science on a grand scale.

Let us now summarize the scientific aspects of the miracle of rain. The results of the latest scientific research have shed light on many previously unknown points concerning water, clouds and rain. These results constitute an almost miraculous explication of the verse presented above. We may summarize these points as follows:

1. A study by Vincent J. Schaeffer in the United States has revealed that particles of water do not freeze down to -40°C when they are very fine and pure. Water has to be impure and formed of large masses in order to freeze at zero degrees centigrade.

A cloud is a special physical structure that is formed of water vapor, but which is immediately converted into minute water droplets. It therefore does not share the properties of ordinary water. Atmospheric clouds do not freeze and descend even at -30°C .

2. Clouds are formed by the agglomeration of tiny water droplets around particles of salt or cosmic dust. These tiny nuclei constitute the basis for rain. Not only is the origin of cosmic dust unknown, but so is the way in which these dust particles become lodged in the cloud. However, it is believed that the salt water at the ocean surface participates in the vaporization process by contributing particles of salt.

3. It is conjectured that there are about one billion water particles per cubic millimeter during cloud formation. There are 50-500 cloud droplets per cubic centimeter in clouds. The conversion of these droplets into raindrops is a matter for great deliberation.

The theory of Bergeron-Findeisen was considered to provide the explanation of cloud droplets up to 1950. According to this theory, the water droplets first form condensation nuclei, and raindrops then coalesce around them.

4. According to studies performed in recent years, the growth of a cloud droplet in time proceeds concomitantly with various circumstances. A drop of water gradually

assumes the nuclear state, overcoming conditions even of forty degrees below zero, and produces rain through a very complex equation:

$$(S-1) \quad \frac{dr}{dt} : \frac{\frac{2 \gamma M}{P_{2L} R T r} + \frac{8.6 M}{M_1 R_3}}{\frac{L_3 M_p L}{K R T_2} + \frac{P L R T}{D M P \infty}}$$

5. As for the production of rain, these minute particle first coalesce around the condensation nucleus. The water particles grow and their surface area increases as they approach the ground. This surface increase allows a rain-drop's velocity to be checked by air friction, so that rainfall acquires a gentle descent. This balancing process is a miracle of the Divine: By the time the raindrop reaches ground, it has gained such a mild speed that it makes a soft landing, almost as if by a parachute. The equation for this descent and balanced speed is:

$$\frac{dr}{dt} : \frac{EW}{4 P_4} (V-v).$$

Let us now reread the first sentence of Verse 11 in the light of these scientific facts: *"He sends down rain in proper measure."*

All this indicates that the descent of rain is a very subtle matter, a matter for calculation. If compared to the last part of the verse, it is a miracle of divine science akin to the raising of the dead.

The atmospheric physics of today has also considered the secret of rain formation and rainfall a scientific wonder, and many volumes have been devoted to this subject. Those who are interested can consult Robert Byers' *Elements of Cloud Physics* and Louis J. Nin's *Cloud Physics and Cloud Seeding*.

We now come to the secrets of the second sentence in the verse: *"We gave life to a dead land with it."*

a) When the soil is dry, there is a hidden and lifeless domain beneath it. For the soil is actually alive, but its life is activated by rain. What does science have to say about this matter?

There are a million times a million bacteria in a gram of soil. These bacteria lose all activity and become dormant when it does not rain for a long time. It is as if they change into lifeless genetic codes. All these microbes revive when rain falls, and commence a large production campaign beginning with nitrogen fixation. Their activity in turn gives life to thousands of small organisms: It is as if a dead underground city has come to life. Fertilizers form, the seeds of innumerable small plants revive, opening channels under the ground like the roads of a city with their roots. Next, small insects and ants, each with their own nests, burrow under the earth like a large city. This is how a "dead land" is revived.

b) What is the life-giving secret of rain? How does rain vivify biological events, i.e. the life process? This part of the verse directs our attention to the connection of rain, and so of water, with life.

The basic chemical substance of living things is a bridge of hydrogen, lending continuity to the life of an organism, which we call the "hydrogen bond". This

hydrogen is changed frequently, forming new bonds and transferring vitality. Now this hydrogen can be replaced only by the hydrogen produced during the ionization of water. This is why water is indispensable for life.

This rule holds for all living things. A dehydrated organism is like a frozen skeleton even if it preserves its DNA and its genetic code: It can neither reproduce nor move. When water arrives and donates hydrogen from its separating H and OH ions, the code of life jumps into action. This is easily seen particularly in the case of microbes. In more developed organisms, vitality cannot be restored even when water arrives because the tissue layers have been damaged by dehydration. The *"revival of the dead land"* brings expression to such profound biological laws. If we had known how to read and comprehend the Koran especially during the last three centuries, the race to be first in discovering countless scientific facts would have been ours for the taking.

We now turn to the last part of the verse: *"Even so will you be brought forth."* Our resurrection, the verse now declares, is a similar activation by Divine Ordination of our codes remaining in the soil. It declares that just as the rain activates these genetic codes in a dead land and suddenly regenerates life, the codes will be processed and revived with the speed of a computer as soon as the Divine Will gives the order: *"Come to life, arise."* And finally, its analogy with rain means that God, Who gives life under the ground by sending a hydrogen ion, will doubtless also restore us to life when He wills.

Approximately ten billion human beings have lived on earth since Adam. The size of each individual's code is about 1 micron; if you collected them all, they would not fill

a glass. If God were to pour the genetic codes of all the humans He created from a glass into the soil, including those whose codes have been lost, and were to say *"Now, Be!"*, all human beings would be recreated in the twinkling of an eye.

This is the similitude that God provides in this verse, for those possessed of minds and knowledge. In effect, He is declaring: *"Just as I have given life to an entirely dead, lifeless land with a raindrop, it is no trouble at all for Me to reactivate the hydrogen in your biological genetic codes."*

TOPIC 6.

THE ATOMIC NUCLEUS

●

فَلَا أُقْسِمُ بِالْحُنُتِّسِ ۖ الْجَوَارِ الْكُنَّسِ ۖ
التَّكْوِيَرِ

"No! I swear by the hunnas (the descenders),
those which sweep along in their kunnas (orbits)."

(A VARIANT TRANSLATION:)

"No! I swear by (those which recede and
disappear), those which sweep along in their
(orbits)."

THE ATOMIC NUCLEUS

These verses are among the most difficult to interpret in the Koran. They are not easy to understand. The reason for this is that the verses disclose very profound physical truths. On the other hand, the chapter in general presents explanations about the Resurrection that can be comprehended only with difficulty. Verses 1-14 contain descriptions of the Resurrection, while verses 15-16 give the two basic principles of the universe and of astrophysics. In this way, the chapter emphasizes the fact that human beings require a very profound knowledge of physics before the concept of the Resurrection can be properly appreciated.

As can be seen, the words *hunnas* and *kunnas* have to be known before the verse can be comprehended. These are Arabic words. For centuries, however, it has proved impossible to fathom their presence in these sentences by simple recourse to a dictionary.

The first interpretation of these two verses belongs to our Master Omar the Caliph, who also furnished much information on this chapter, and who interpreted the meaning of the verse in terms of planetary orbits. Readings in those days and later to the effect that "birds return to their nests" are ruled out by the divine declaration *fa la uqsimu*.

"The orbits of planets", also mentioned by Omar, is one of the acceptable interpretations. It is another marvel that this verse, revealed 14 centuries ago and embodying the most fundamental principles of physics, should be explicable with reference to its astronomical signification.

Hunnas: The opposite of flow; to descend, contract, shrink, fold up.

Kunnas: A certain route, orbit, or trajectory; the channel or nest of a moving object.

In evaluating both words, the gravity of the declaration "*No, I swear*" (*fa la uqsimu*), which introduces the meaning common to the two verses, should never be forgotten. The fact that the chain of verses explaining the Resurrection reaches a terminus with Verses 15-16 and God's oath begins, indicates that a very important explanation is about to be made.

Let us now look at the fundamental units of physics. Which of them possess the properties of *hunnas* and *kunnas*?

a) Let us take an isolated atom. What is its structure? A nucleus into which a gigantic amount of energy has been 'folded up' or concentrated (*hunnas*), and electrons that sweep along in their orbits ('nests' or shells: *kunnas*) around it. This is a dual system which bears both the secrets of *hunnas* and *kunnas* within it. What fair person could regard this interpretation as contrived? And how else can this situation be described, except by Verses 15-16?

Of course, God is giving the smallest constituent of ordinary matter, the atom, as an example of the vast destruction that will occur prior to the Resurrection. See how

the secrets of *hunnas* and *kunnas* balance each other, he declares; *If I were to say, unbind and scatter, can you imagine the terror that would ensue?"*

b) Let us now look at another unit of physics: Quanta and their dimensional channels. We know from modern physics that the quantum wavicle, the basis of existence, selects a dimensional channel according to its energy. Dimensions are motionless, mysterious, receding (*kunnas*) directions, while quanta represent energetic, violent motion. But in a specific channel, *hunnas* is represented by the quantum that occupies this channel ("nest").

In the face of such facts, interpretation of the sacred verse yields the secret: *"I swear by the receding dimensions and by the quanta that occupy them."*

c) When examined from an astronomical viewpoint, as indicated in an earlier interpretation, there are the locations of dead stars (black holes) which have contracted and finally receded beyond an "event horizon" (*hunnas*), side by side with quasars and stars out of which gigantic amounts of energy flow, such as supernovae (*kunnas*). The former are *hunnas* in the most precise sense of the term: Points which harbor vast energies but which have contracted and become quiescent, almost losing their connection with spacetime altogether. And on the other hand, stellar objects that move along the trajectories of billions of gravitational *hunnas*.

In order that we may understand the inner meanings of the Resurrection defined in the Chapter of Folding Up, God enjoins us to look at the stars of this cosmos also from the standpoint of the *hunnas* and *kunnas* secrets.

God the Exalted defines the Resurrection within the

inner meanings of the Koran in Verses 1-14 of the Chapter of Folding Up, and draws attention to this point by means of an oath.

And what is that point? —Systems defined by the couple *hunnas* and *kunnas*. It is essential that these systems form interrelated wholes. The three examples given above constitute such systems.

I would like to underline a significant point at this juncture. Which of these three systems does the verse imply? The answer is that it implies all of them, and many other physical realities as well; for the verse constitutes an archetype for physical genesis.

Just as gravitation exists as a force both in stars and in atoms, the *hunnas/kunnas* secret resides at the root of all physical systems. Starting from this viewpoint, we can form a bridge to more interesting physical laws, one of which I would like to explain here.

On the quantum level, many fundamental subatomic particles (electrons, protons, neutrons, etc.) possess a *spin*. Within spatial dimensions this motion creates a magnetic effect; or, more precisely the dimensions implicit in space are vibrated, thus creating a magnetic field. It is impossible to explain this event in everyday terms, but the verses reveal its truth to us. The secret of these dimensions is a receding, hidden force. The motion of the quantum represents the secret of *hunnas*, while the magnetic potential of space represents *kunnas*.

Gravitation itself arises from a *kunnas* secret. This is why the Lord God swears by this hidden physical law operating throughout the expanse of the universe in Verses 15 and 16.

Verses 15 and 16 harbor very important secrets from the standpoint of the spiritual sciences as well. We shall omit this subject for the present, however, due to the plan of this book.

Every creation has a *hunnas* and a *kunnas* condition. One is the flowing state of harmonious motion, while the other is its receding (hidden) state where it is concealed as if dead. In physical terms, we should call these two forms the phase of motion and the phase of latent quiescence. And in fact, the most recent theories of physical cosmogenesis give expression to this fundamental concept:

a) According to the theory of Martin Ryle and Alan R. Sandage, the universe was formed by violent motions proceeding from a point of contraction 20 billion years ago (the "Big Bang" theory). The energies locked in that point and those of the colossal scattering motions that followed are equal to each other.

b) According to the the theory of Andrei Sakharov, the present universe is the antiuniverse of another that has receded and disappeared. That universe is now quiescent, counterbalancing the universe of motion that presently exists.

Yes, dear reader: The magnificence of Verses 15-16 of the Chapter of Folding Up is apparent from the fact that God in effect declares: *"In order to comprehend the Resurrection, you must look first at the receding (dormant) and flowing (active) universes."* And in transmitting this declaration to us, He begins with an oath; i.e., He declares: *"What a great secret of creation that is."*

Yes, let us reread the verse:

"No, I swear by the receders, and by those which sweep along their trajectories."

An amazing secret of genesis and physics is thus delivered into our hands, fourteen centuries in advance.

THE SECRET OF DIMENSIONS



رَبُّ السَّمَوَاتِ وَالْأَرْضِ وَمَا بَيْنَهُمَا وَرَبُّ
الْمَشَارِقِ ﴿٥﴾ — الصَّفَّتْ، ٢

"He is the Lord of the heavens and the earth, and
all that lies between them; He is the Lord of the Easts.

THE SECRET OF DIMENSIONS

In its first verses, the chapter brings definitions to the concepts of the universe, man, space and angel. Consequently, it is necessary to take the interpretation of the verse in its proper context. The beginning of the verse in its proper context. The beginning of the verse proclaims that God is the only Deity of the heavens, the earth, and all in between.

The concept of the Lord of everything is defined in this setting and within the limits of our knowledge. Since the earth, the sky and all else in between have been mentioned, a different reality and spatial continuum is not in question. The verse does not end here, however, and a new concept is added to this definition: *"He is the Lord of the Easts."*

So in addition to the earth, the sky and all in between, we have the concept of "Easts." As is known, the plural form is used for three or more things in Arabic. God, therefore, is the Lord of at least three Easts, or of many Easts. What kind of scientific concept does this verse introduce? Before seeking an answer to this question, let us call to mind certain facts of science.

It is a commonplace that we conceive of space in terms of three dimensions. The existence of an object is deter-

mined by the space it occupies with respect to the dimensions of length, width and height, in addition to its position.

But is the universe composed of, and space constituted by, these three dimensions alone? Until Einstein's Special and General Theories of Relativity, scientists believed that the universe consisted of three dimensions. The world-famous physicist, however, determined on the basis of mathematical calculations that there are more than three dimensions and that a fourth, fifth or higher number of dimensions would introduce different concepts of space. According to Einstein, the fourth dimension is time: Time is not simply a matter of reading a clock, but a dimension of the same order as height, width and length. It is coextensive with the other dimensions. Our visual perception, however, can see in only three dimensions and no others. In fact, some organisms cannot even see the dimension of depth: Lizards and snakes view their environment in two dimensions, like a photograph or a movie cartoon.

Starting from this milestone of physics, we would have to conceive of spaces other than and in addition to the physical space we observe in the universe at large. In these spaces, velocity is different, time is different, action is different; and so are translation, convergence and regression. This is why the concept of "worlds" introduced by the Koran is an expression of such diverse spaces. The World of Angelic Beings, Heaven, Hell, and the World of Spirits all lie in the domain of such spatial continua. Our difficulty in conceiving of them stems from our perceptual deficiencies in this world of only three dimensions.

Having noted this fact of science, let us now recall the final part of the sacred verse: *"He is the Lord of the Easts."*

It is a well-known fact that the East is the expression of a direction, a dimension, and this definition arose for the first time in connection with the sun when dimensions were being defined. As the word "orientation" also implies, direction is associated with the Orient or East as the first dimension. Although the expression "*Lord of the Easts and of the Wests*" occurs in many verses in the Koran, only the Easts are mentioned in this sacred verse. This is why we are dwelling on this point at such length.

The point is that "the Easts" are proclaimed as a set of directions, quite apart from the existents we refer to as the earth and sky. With this verse, God draws our attention to other directions and dimensions, indicating the existence of worlds and spaces composed of dimensions other than the physical world we are familiar with. In a sense, He says: "*I am the Lord of the Easts*" in order to introduce the definition of infinite dimensions, which contemporary physics is just beginning to discover. But why only the Easts? Because in the definition of dimensions, the first dimension is the East, whereas the West is simply an extension of the Eastern dimension in the opposite direction. We can say that this verse clearly heralds the existence of thousands of spaces and worlds embedded in an infinite-dimensional matrix.

As I have explained earlier, many other meanings derive from the verse besides the meaning intended above. I would like to mention two more of these.

The meaning "births" can also be derived indirectly from the word *mashariq*. In this case the meaning points to a different scientific truth. The East, which is where the sun rises, also symbolizes the direction in which the earth moves around the sun. Do we have only one East, or only one motion in the universe? No!

While the earth revolves around the sun within the solar system, the sun is also revolving around the Milky Way galaxy together with its family of planets. The Milky Way, in turn, is revolving around the central axis of the supergalaxy or local cluster of galaxies to which we belong. In this way, we are enabled to speak of three different Easts.

This meaning, therefore, is also hidden within the statement "Lord of the Easts" (*Rabb'ul mashariq*). It affirms these extremely interesting facts about the universe within the edict, "We have many Easts." The fact that *magharib* (West) does not succeed *mashariq* (East) in this verse is a confirmation of this. We shall see while interpreting future verses that there are many statements in the Koran pointing to the rotation of the earth. For this reason the East, which is related to the earth's revolution, is cast in the plural, indicating that these rotations occur at many levels.

If we take the verse from the standpoint of a direction on earth, the concept of the East differs for each location on the globe. The East of Turkey is in the East with respect to its Western regions, while our East is actually West from the standpoint of Iran, which lies even further East. Therefore, the "East" concept is different at every point on earth, and these concepts form an ensemble of Easts. This concept geometrically defines the surface of a sphere.

Let us now reread the verse in order to discover a further significant observation of science: "He is the Lord of the heavens and the earth, and all that lies in between; He is the Lord of the Easts."

The heavens, as we shall see in future verses, are very diverse spheres. So is the expression "between the heavens and the earth" mean? It is known that meteors, stars, even angels and various unknown beings, can be encountered at

various levels of the sky. What are *"those between the earth and the sky"*? As far as we can tell, they are invisible rays which form the basic building blocks of matter and energy. These rays, earlier lumped together under the generic term *"cosmic rays"*, are today differentiated within the broad categories of nucleons, baryons, leptons and fermions in modern physics. These are the subatomic constituents of matter and energy.

With the expression *"He is the Lord of all that lies between the heavens and the earth"* God explains that all these energetic particles and rays constitute a vast physical order subject to God's attribute of Lordship. Modern physics has viewed these incomprehensible energy dissipations and rays with unease, almost seeing them as dangers threatening the destruction of the universe. The sacred verse reveals that, on the contrary, they form a gigantic physical balance under the superintendence of God.

THE KORAN REVEALS THE ROTATION
OF THE EARTH



وَتَرَى الْجِبَالَ تَحْسَبُهَا جَامِدًا وَهِيَ تَمُورُ مَرًّا السَّحَابِ
صُنْعَ اللَّهِ الَّذِي أَتَقَنَ كُلَّ شَيْءٍ إِنَّهُ خَبِيرٌ بِمَا
تَفْعَلُونَ ﴿٨٨﴾ — النّاز

“You see the mountains and think them jamid (lifeless, motionless); yet they progress, just as clouds progress. Such is the handiwork of God, who has disposed of everything in firmness. He is completely aware of all you do.

THE KORAN REVEALS THE ROTATION OF THE EARTH

As in the case of other verses, let us first identify the points that will guide us to a scientific interpretation of this verse:

1. The mountains appear to be static, yet are actually in motion.

2. This motion of the mountains is similar to the motion of clouds.

3. The motion of mountains is not an imaginary or relative occurrence, but a firm manifestation of God's art.

I have been able to identify two very clear scientific explanations in this sacred verse. Indeed, these are miracles that will astonish any fairminded scientist, as I hope to demonstrate below.

a) If we look at the geological structure of the earth, we find that the part formed of soil and rock (the "crust") constitutes a restricted layer like the thin rind of an orange. Most of the earth's diameter is constituted of molten metals and rock called "magma". Hence, there is a liquid core inside the earth, surrounded by various solid layers and

finally, soil and rock or equivalently, mountains on the outside.

As the sacred verse clearly reveals, this structure is wholly a piece of divine handiwork. Approached from this standpoint, it will be readily comprehended that the earth's crust, for all its firmness, possesses a secret of very slow motion. These motions, which are more pronounced at the borders of the layers we call "faults", leave the door open for volcanoes and earthquakes.

The earth, therefore, has a very firm structure due to divine handiwork, as is clearly explained in the sacred verse; however, its core also possesses a very slow motion which is the subject of fluid statics. The stability and firmness of our world, which consists of various layers with differing structures all the way down to the core, constitutes a divine miracle in itself.

b) *"Yet the mountains progress, just as clouds progress."*

Since clouds move in the sky, mountains must also move in a spatial direction. If the verse is consulted, the first sentence states that *"you think them jamid"* Jamid means physically static, inert, lifeless, motionless. How are mountains enabled to move in space like clouds?

There is only one way in which this movement can occur, and that is by way of the motion of the earth. Indeed, a very important miracle of the verse is the fact that clouds moving rapidly in the wind have approximately the same speed as the earth's rotation. Mountains progress like clouds in three dimensions, and this motion is the result of a firm balance, of sacred artwork.

Again, observe the subtlety of its wisdom when the

verse, after informing us of the spatial progress of mountains, i.e. the motion of the earth, states that this phenomenon is the firm law of cosmic organization. What is this law of divine art? Here is what astrophysics has to say regarding this question.

All the stars and planets in the universe lead their existence within the harmony of two powerful balancing forces. One of these forces is gravitation, which is an ineluctible law of unity: All masses obey the tendency to become one single mass by attracting each other. The other force needed to continue their existence is the centrifugal force obtained their existence is the centrifugal force obtained by rotational motion. The sacred verse draws attention to this law, pointing out that the spatial movement of mountains similar to that of clouds is a principle of firmness. When God says: *"Bring us a like verse, bring us even a like word"* in the Koran regarding that Book, He also implies the secret of such marvels.

To summarize this second interpretation of the verse:

1. You think that the mountains are fixed.
2. They progress spatially like clouds.
3. Rotational motion contributes firmness to this process by delicately balancing the gravitational force.
4. This rotational movement, which is one of the basic laws of the universe, is a manifestation and principle of divine handiwork.

How beautifully, dear reader, each word of the verse underlines a different fact of science! —And this, fourteen centuries ago, in an age when people had many strange notions about the world, and additionally without confu-

sing those people in their elementary mentality and landing them in ruin. Here is the art and here, the miracle of the Koran.

As for the final sentence of the verse, it expresses yet another profound law of divine truth: *"He is completely aware of all you do."*

God, who has created entire worlds with a physical art that defies comprehension, governs all things at every point of the universe as if by a gigantic network of computers. Such a system implies that every event in the universe is automatically recorded in some mathematical sense.

The phenomena programmed by this means are manifested each instant, and make themselves visible through His will. Yesterday, we had difficulty in comprehending such matters. But today, thanks to recent discoveries and especially the examples provided by electronic brains and computer networks, we are able to reach a better appreciation. Actually, we live in a world of similitudes. When we say "Heaven", we are reminded of flowers, gardens and flowing rivers: We try to comprehend Heaven by analogy with the beauties of this world.

THE VERSE THAT SHOWED COUSTEAU
THE RIGHT WAY

هَرَجَ الْبَحْرَيْنِ يَلْتَقِيْنَ ۝ بَيْنَهُمَا بَرْزَخٌ لَا يَبْغِيْنَ ۝
— الرَّحْمٰنُ —

"He has let forth the two seas, that they should
meet together. There is a barrier between them
which they do not overpass."

GIBRALTAR'S
SHALLOW SILL



Like the spillway of a giant dam, the shallow Strait of Gibraltar keeps Atlantic waters from mixing freely with those of the Mediterranean basin on the other side. Warm surface water can ride in from the ocean over the cold outflow from the Mediterranean deeps (see arrows), but the stone sill between Spain and Morocco blocks the deeper ocean waters. One effect of this is to restrict the plant and animal life of the Mediterranean, since the incoming surface waters do not contain sufficient nitrates and phosphates to support a flourishing growth of plankton, the first link in the marine food chain.

Life Nature Library
'EURASIA' 1983 edition

THE VERSE THAT SHOWED COUSTEAU THE RIGHT WAY

Two important points are covered in the verse:

1- The necessity of seas to mingle through straits between them. This, of course, is the normal situation.

2- The fact that the two seas do not come together because of a barrier between them.

Let us first isolate the phenomenon in scientific terms. The French scientist Jacques-Yves Cousteau, famous for his underwater researches, has discovered that the Mediterranean and the Atlantic Ocean differ in terms of their chemical and biological constitution. Captain Cousteau conducted various undersea investigations at the Straits of Gibraltar in order to explain this phenomenon, concluding in effect that: "Unexpected fresh water springs issue from the Southern (Morocco) and Northern coasts (Spain) of the Gibraltar. These mommoth water spouts gush forth towards each other at angles of 45° , forming a reciprocal dam like the teeth of a comb. Due to this fact, the Mediterranean and the Atlantic Ocean cannot intermingle."

Indeed, subsequent to this assessment, Cousteau was amazed upon being shown the above verses, was filled with admiration for the Koran, and accepted Islam.

The wonder of the sacred verse as concerns science consists in the fact that the Gibraltar barrier is revealed. Now let us scrutinize the sacred verse once more within the general context of the Chapter of the Compassionate. It is known that this chapter takes divine grace and the infinite wisdom and art of creation as its subject.

The separation of two seas by the straits connecting them has an inner meaning. What is this meaning?

The sea bears more living things than does land. With the almost infinitely numerous tiny organisms we call plankton, their countless flora and fauna of all kinds, the seas are a theater of divine handiwork in their own right. It is also obvious that different organisms will inhabit differing environments. This is one of the reasons why divine power does not allow the seas to mix.

This meaning, however, further invites our attention in Verse 22 — especially to the plankton composition of the seas, and to the flora and fish distributions that change with variations in temperature. This verse announces the presence of pearls and coral in both seas. Hence, the reason for separation is not simply the chemical composition of the sea, since pearls and coral exist or disappear in accordance with the chemical properties of the sea.

In this way, the nonmixing seas prepare the living environment of the most beautiful undersea gardens and fish, sources of endless pleasure when viewed in their natural medium.

There are specific flowers covered with squat plants unheard of on dry land and other special flowers under the sea. Some of these (*Lepas fascicularis*) are lotus-like flowers which are prettier than orchids. On the ocean floor where

sunlight cannot penetrate, ornate insects and wonderful spiders living thousands of meters beneath the sea lead their lives by means of the radar systems they are equipped with.

Again, the fish *Acanthurus triostegus* has thousands of fluorescent spots on a red background that both light up its environment and ease its life. Nearly thirty different color hues have been distinguished on a fish living at such lightless depths. These creatures, representing the pure art of the Compassionate Lord, are the manifestation of the inner meaning of the oceans' nontransgression secret. As the sacred verse further imparts, so many varieties of organisms inhabit the corals on both sides of the Straits that we cannot exhaust their number or patterns by enumeration.

Flowers decked out in all the shades of blue, yellowish-red plants resembling cactuses, and amongst these, ocean spiders adorned with fluorescing blue spots on grey-brown patterns (*Cypraea tigris*), all stagger the imagination.

We have a reason for listing these organisms by name. How do these divine patterns and decorations come to be displayed at the bottom of the sea, normally inaccessible to eyesight? The Chapter of the Compassionate discloses the infinite beauty of our exalted Creator's art by relating these insights in Verses 19 through 25. Then, after 14 centuries have elapsed, atlases showing the creatures of the ocean are published, and the secret of these verses is experienced as you view the thousand and one organisms pictured therein. Within the wisdom of the nonmingling oceans, luminous fish with mouths surrounded by light-emitting organs lead you through this enchanted world as if they were guides on duty.

In the light of recent information, I would like to give a few more details on the question of how life appeared on earth, as well as the more general question of life per se to be found in many verses of the Koran.

Since the 19th Century, the effort to discover the truth about life has become an obsession with scientists. Initially, the chemical composition of organic structures was investigated, — enabling the determination of the chemical differences between living things and inorganic matter. This is how organic chemistry was born, and it has developed as a separate branch of chemistry.

According to initial results, the most important distinction of organic structures was that the carbon atom bore negative charge. Although carbon is always found with a charge of $+4$ in nature, it assumes a valence of -4 in organic structures, and can form chains of compounds with hydrogen by virtue of this fact. Later, the significance of nitrogen in organisms was also discovered. In addition, structures called "amino acids" that definitely did not exist in inorganic matter were found in organisms. An amino acid, however, would just sit there in the test tube and refuse to be alive, although it was no different in structure from its counterparts in living organisms.

All this information was capped by James. D. Watson's discovery of the giant DNA molecule in living matter. It was determined that the bearers of genetic traits in organisms —the chromosomes— were woven from this giant molecule.

The basic structure of life had, therefore, been found. Starting with the 1950's, organic structures underwent a more conscious examination, leading to the discovery that the hydrogen ions in the DNA molecule were bonded to

each other by impermanent bridges. There now remained one question: If all organisms, from grass cells to brain neurons and a thousand varieties of bacteria, were composed of the same molecule, why was there such great variety of life?

The answer to this question was initially sought in terms of the connections between molecules and the ordering of these bonds. But these differences of order were likewise insufficient to explain the difference between a cell that makes bile and one that converts light into electricity at the rear of the eye.

In the end, science came to understand that the cell, or in other words life, is a matter of mathematical programming. That is, all kinds of organisms are each loaded with a mathematical computer program. The chains of DNA in their structures form the hardware for this program, just like a small pocket calculator we might hold in our hands. This is why God frequently declares the decree "*We created and prearranged*" in various verses in the Koran.

Having acquainted ourselves with life in the context of such a scientific concept, we shall be in a better position to understand the quickening of the soil God, after creating the earth in its material aspect, willed life in the soil and in water, and programmed the molecules of life.

TOPIC 10.

THE SECRET OF VITALITY IN THE SOIL

●

وَايَةٌ لَهُمُ الْأَرْضُ الْمَيِّتَةُ ۖ أَحْيَيْنَاهَا وَأَخْرَجْنَا
مِنْهَا حَبًّا فَبَسُّهُ يَاقُوتُونَ ﴿٣٣﴾ — يٰسَيِّدِ

“And a sign for them is the way in which we give life to the earth that is dead: We quickened it and brought forth from it grain, of which they eat.”

THE SECRET OF VITALITY IN THE SOIL

As we have done for the other verses, let us first identify the points which bear on science in the verse:

1- The expression "dead earth" is used instead of "dead soil", indicating that all the soil of the earth is implied.

2- One meaning of the expression "*this is a sign*" in the verse is divine portent. The presence of this definition at the outset of the verse indicates that the verse will discuss a very important family of scientific laws.

3- We are informed that in its initial and natural condition, the earth was devoid of life. In this way, the lifelessness of the earth when it was first created is expressed as a geological fact.

4- It is announced that the soil, which appears dead on the surface, is actually alive. Even from this single aspect, the verse constitutes a miracle in its own right. For it is only a hundred years since it was discovered that there are organisms in the soil, while it is scarcely forty years since the discovery that almost all the soil (80 %) consists of bacteria, and thus is a community of organisms.

5- *"We quickened it and brought forth from it habba."*

According to the latter part of the verse, *habba* signifies seeds of a vegetable nature or, specifically, grain. However, *habba* in general denotes small, uniform particles, and we shall discuss the verse's inner meaning also from this angle.

6- The verse declares that life is transferred via the soil to plants and thence reflected to us and our lives, which is singularly important from the standpoint of biochemistry.

Again, the verse has used the word *habba* in the general sense, but mentioned what is eaten from it as vegetative food.

In order to comprehend this verse in all its subtleties, one first has to know the concepts of life and vitality in their true scientific aspect. For the concept of vitality ("the Living") has changed greatly, and has come closer to its inner truth in recent years. The biological knowledge of yesteryear has been left far behind.

Life is a mathematical program coded on a giant chemical molecule. The Koran indicated this fact, which has been discovered only in recent years, 14 centuries ago with the statement: *"We created him from a drop of fluid; we shaped and programmed him,"* in Verse 19 of Chapter 80

God first created bacteria fixing nitrogen in the soil. In chemical terms, these are laboratories of synthesis; that is, they take nitrogen from the air and prepare compounds with negative valences. These bacteria reduce nitrogen by a method we still cannot fathom, and convert it into a form in which it can combine with hydrogen. They require water and rain for this purpose. This is why we observe that life springs forth from the soil when it rains.

A second type of bacteria in the soil is what might be called the "analytic group" due to the divine program they have received. They break down everything falling to the ground, preparing the way for synthesizing bacteria. The soil consequently resembles a vast chemical factory. If water is excluded, the greatest part of a gram of soil is composed of microbes.

In botanics, soil is regarded as a totally living structure. That is, the soil has been a living being ever since the origin of life on earth. A great miracle of the verse is that it informs us of this fact 14 centuries in advance.

Since the concept of life has been understood thus far, I would like to broach an important subject at this point in our discussion.

You know how unbelievers distort the facts about the emergence of various organisms in order to show confusion in people's minds. According to atheists, organisms have evolved from a single cell, spawning various plant and animal species in the process. This is called "the theory of evolution". I wish to address this issue which bewilders innocent minds. For the secret of "the Living", which gives life to the soil, and the formation of plants from seeds after the soil has come to life, are diametrically opposed to the concept of evolution. The expression in the Koran must, of course, be correct, while any notion opposing it can only be incorrect.

The theory of evolution was propounded toward the end of the 19th Century. As I have just explained, organisms were thought at that time to embody different chemical structures, the smaller organisms having a simpler chemical composition, while a more complex organism had

a different one. The mathematical program within cells was totally unknown.

An evolution of structures could, of course, be conceived as a first step. The differences of growth among organism, however, resided in their mathematical programs and the perfectness of these programs is not open to question; nor is it possible to speak of their evolution. Given a cell producing bile and a nitrogen-fixing bacterium of simpler countenance in the soil, for instance, which one of these performs the more difficult task is not subject to debate: Chemically, binding nitrogen to hydrogen is undoubtedly the harder task. Again, bacteria are thought to be the simplest organisms, yet some of their tasks can be accomplished neither by a neuron in the brain, thought to be the most developed cell, nor by any human intelligence. While DDT, the famed insecticide of yesterday, was wreaking havoc with the environment, the common housefly, considered to be a simple, lowly creature, developed such a prescription in the fluid of its nerve cells that it proved impossible to exterminate another fly with this chemical. A neuron in the human brain could not produce this prescription and precaution if it were to labor for a thousand years.

Well, now, which cell is the evolving one? Of course, man is the most perfect of organisms, but he cannot do anything outside the program ordained for him, and, as mentioned in the Koran, can even be defeated by a fly.

Thus, it can easily be seen that the concept of evolution is man's own fancy, once the concept of life is examined in depth as above. Fish with luminous organs were swimming at the bottom of the ocean millions of years ago, just as bats equipped with radar were flying in the air, whe-

reas we are just discovering these facts and starting to put them to use.

A most important question concerning life in modern biology is how abilities are to be handed down, even if the genetic codes of species are inherited. That is, even if an organism inherits its entire constitution from its parents, how does it acquire the inscrutable abilities it needs in order to continue its life? From whom does it learn how to build nests, to defend itself against other creatures? If a living organism represents a mathematical computer program, how is this program transferred from generation to generation without fail or distortion?

In seeking an answer to this question, modern biology has accepted that a certain program called the genetic code is inscribed in the chromosomes, and automatically passed on from generation to generation. This genetic viewpoint may be satisfactory for coarse external similarities between cells, but a satisfactory explanation for embryonic cells and cells of the bone marrow cannot be reached starting from this viewpoint.

God declares: *"Without divine science no woman conceives. no fruit separates from its rind"* (Chapter 41, Verse 47). The scientific meaning of this verse is: "Every cell is given its mathematical program in a continuous fashion."

The meaning that results collectively from the verses is that life, or vitality, has two different aspects. The molecules that form the organism are its physical components, while the mathematical program imposed on this structure is akin to the programming of a computer. These programs are, in a sense, the organism's fate.

In the concept of fate, we have become accustomed

to the view that each event is always followed by a consequence. Verse 12 of the "Ya Sin" Chapter, on the other hand, informs us that each creature is recorded in the Guarded Tablet in terms of its individual qualities. This declaration is an invariant law for the more general case of life as well. Everything a weed cell, a flower or a gall bladder cell will perform is coded and incised in the cellular computer by means of divine omniscience.

The principle of life's continuation is given in the second part of the sacred verse we are trying to interpret. Here, it is declared that after initiating life in the soil and having the organic materials indispensable for life prepared in the soil, God created plants from it which carry the basic structural materials necessary for other organisms.

As everyone knows, the "grain" mentioned in the verse is the seeds of the plant on the one hand, and on the other hand comprises the matter of a complete cell; that is, all the organic materials to be used by an organism exist in grain. This fact wasn't known in earlier times —that is it wasn't believed that grain contains carbohydrates, protein, fats, vitamins and minerals all at the same time. Rather, it was thought that food derived from wheat and similar plants could not provide sufficient nutrition. But the *habba* (grain) actually represents all the basic materials necessary for life in their entirety.

This also underlines the fact that the plant cell and the animal cell have common building blocks. The difference lies in their programs of predestination.

One of the most important inner meanings of the verse is that the soil vitalized by God also serves as an incubator for organisms. This secret is imparted especially in the second part of the verse.

The fertilized egg develops in three basic ways:

- 1- Beneath the earth (all plants),
- 2- Inside an egg shell (most animals),
- 3- In the mother's womb (mammals).

Actually, from the scientific point of view, all three kinds of development serve the same purpose of instilling life in the organism. The fertilized egg needs a period of incubation and development in order to form the new organism. Biologically, this process is one in which the cells of the seed or the fertilized egg are constantly multiplied until they assume the form of the new organism. The seed needs protection during this period, and must draw certain chemicals and ions we still have not been able to pin point from its environment. In this way, it will be born into life as programmed.

In this verse, the Lord God emphasizes that He has given this characteristic to the soil. Taking only this property of the soil as an example, the vivification of grain is demonstrated.

Actually, this feature of soil also provides an important insight for the Judgement Day.

When the command for resurrection is issued on the Day of Judgement —and this, too, is a mathematical program— the secret of the verse will be revealed once again, and the dead will be restored to life in that instant.

This verse may also be regarded as bearing on the wisdom of Adam's creation from soil in two respects. As everyone knows, it is the declaration of the Koran that Adam was created from soil with the texture of mud. We

shall investigate that verse in detail in the future. In the meantime, the important thing is that God imparts to the soil from the secret of His divine name "the Living". It can be clearly seen from the expression comprising the two sentences of the verse that God has both bestowed life and vitality on the soil, and has made it the vehicle for propagation of other life forms (the secret of "bringing forth grain.")

Since Verse 32 of the same chapter expresses the resurrection on Judgement Day, this verse in a sense also points to a connection between the resurrection at the Judgement and the secret of life in the soil.

We have learned many things about soil biology in recent years. I would like to summarize this information also from the standpoint of the Judgement.

As mentioned earlier, all the preconditions necessary for the formation of an organism from a seed are present in soil. That is, the soil conveys a fertilized organism to life, just like the mother's womb. Both the fertilized egg and the seed are quite similar in that they both represent a genetic code ready to reproduce. This genetic code is the life and character program of the organism to be formed. These genetic codes are a millionth of a centimeter in size. Because of this, if for curiosity's sake you were to collect together the genetic codes of all the human beings who have ever lived, they would not fill a drinking glass.

It should never be doubted that had God willed, He would have developed the human seed in the soil as well. Indeed, when God ordains in this verse that *"The way in which we quicken the dead earth is a sign, a scientific law (portent). We have brought forth from it grain."* He is giving expression to the facts of science mentioned above. The

sacred verse clearly underlines how deeply the resurrection at the Judgement conforms with the logic of biology.

To summarize the scientific conclusions deriving from the many biological facts given in the verse:

1- The quickening of the soil by God is no ordinary event, but a most profound wonder of biology. The chain of events we call life stems from the secret of "the Living" in the soil.

2- The Day of Judgement is also closely related to the secret of the Living. Whoever doubts the Judgement will find that his suspicions are baseless if he contemplates the wisdom of God's bestowal of life on the soil together with the secret of the Living.

3- Life is, first and foremost, a preordained mathematical program. The division of organisms as primitive or developed is based on arbitrary claims. Every organism is the representative of a highly perfect program. Because of this, the theory of evolution is merely a fallacy in terms of its fundamental principle.

WASHUP: THE BEST PRESCRIPTION
FOR GOOD HEALTH

●

فِي الْآخِرَةِ مِنَ الْخَيْرِينَ يَا أَيُّهَا الَّذِينَ آمَنُوا
إِذَا قُمْتُمْ إِلَى الصَّلَاةِ فَاغْسِلُوا وُجُوهَكُمْ وَأَيْدِيَكُمْ
إِلَى الْمَرَافِقِ وَامْسَحُوا بِرُءُوسِكُمْ وَأَرْجُلَكُمْ إِلَى
الْكَعْبَيْنِ وَإِنْ كُنْتُمْ جُنُبًا فَاطَّهَّرُوا

السَّابِقَةِ

"O believers, when you stand up for Prayer, wash your faces, and your hands up to the elbows, and wipe your heads, and wash your feet up to the ankles. If you are unclean, bathe your whole body..."

Washup, The Best Prescription for Good Health

Here is a grand prescription from among the many marvels of the Koran. The day will come when even unbelievers will imitate the Ablution or Washup, a boon we have been receiving unawares for 15 centuries.

The whole world has learned of the Bodily Ablution or Bath, the bounty of washing one's body, only recently from this verse of the Koran. Societies deeming themselves civilized have been washing their faces and bodies only since the last 70 years. We have learned of the wonderful effects of the Washup, however, exclusively through the discoveries of biologists in the last 20 years.

Let us first investigate what benefits human health derives from the Washup. Washup has three main advantages:

a) The Influence of Washup on the Circulatory System

The circulatory system is based on two main biological principles. The first of these is the heart's duty to transport blood to every part of the body, delivering it to tissue or, more precisely, to cells. The second is the collection of bio-

logically used blood back into the heart. This latter function in particular is of vital concern for the body. Once this reverse circulation is disturbed, diastolic blood pressure increases and aging, even the onset of death, may be precipitated.

What could be the most important issue in this twofold circulatory action?

The answer to this question has been known for many years. It is the healthful functioning of the blood veins and arteries. Blood vessels resemble flexible tubing, dividing into thinner branches as the distance from the heart increases. If thin tubes in particular become hardened and lose their elasticity, pressure is exerted against the heart. This is known in the medical language as arteriosclerosis.

Various aspects of our lives cause these blood vessels to harden and become constricted. This subject, which is considered to be the basis of aging and deterioration, is a separate field of medicine in itself. Improper nutrition and nervous reactions have serious effects on blood vessels. If we were to observe sclerotic development in a blood vessel, could there be any practical measure that might be taken against this deterioration?

The hardening and narrowing of blood vessels do not form instantaneously, but over a long period of time. Vessels distant from the heart, such as those in the brain, feet and hands, are in a more compromising position. The hardening and narrowing process which starts slowly in these locations continues unabated with the passage of time.

There is an application in our daily life, however, which in a sense 'exercises' blood vessels by alternately constricting and widening them. Its agent is water, which gives rise to temperature gradients. Water ensures the

flexibility and vigor of vessels distant from the heart by dilating them when hot and contracting them when cold. It also forces nutrients deposited in tissues due to sluggish circulation back into the bloodstream by virtue of this temperature difference. In the face of these facts, is it possible to view the verse's counsel to wash the hands, feet and face in the Washup formula as anything short a miracle? And particularly in the latter part of the verse, is it possible not to understand the secret of the declaration: *"We want to complete our favors upon you"?*

God has granted us the boon of circulation. He declares that we should perform the Washup so that that favor should be completed and our circulation should be restored to full health.

This dear reader, is only the first of the many gifts of Washup. It is impossible to ignore how Washup protects against senility — which is the way the hardening of blood vessels reflects on the circulation in the brain — in a person who has performed it since childhood.

b) The Influence of Washup on the Immune System (Lymphatic Circulation)

In addition to the circulation of red blood cells in the body we all know of, there is also the circulation of white blood cells (leucocytes). The vessels of this system are ten times thinner than those which conduct red blood cells. We can observe its colorless fluid oozing from the walls in some small scratches or wounds. Now this lymphatic circulation keeps all points of the body under the protection of the immune system. A bacterium, alien object, or cancer cell — the cause of which is not known — invading the body is

destroyed by the warrior cells or leucocytes in the lymphatic circulation. The appearance of an infectious disease of cancer in the body is always contingent on the malfunctioning of this immune system.

Exactly how this system of vessels expands and contracts has not been clarified as yet. It is known, however, that heat and cold influence this system. Catching an infectious disease during a common cold is ascribed to the inability, due to contraction, of these vessels to dispatch leucocytes in sufficient numbers to the afflicted area. Now the proper functioning of this system and its thin vessels, like that of the circulatory system in general, is closely linked with the stimulating effect of the Washup. The structure of the immune system, which provides resistance against all diseases, is reinforced through the Washup, and the divine favor mentioned in the latter part of the verse achieves full realization.

Now suppose someone were to claim that, while the lymphatic system is indeed invigorated by the Washup, this is merely a coincidental and unintended side effect. The form of the command to perform the Washup, however, properly disposes of this incorrect view. I assert that, on the contrary, the way in which the Washup is performed specifically aims at the lymphatic system as well. The reasons are as follows:

1. For the lymphatic system to function properly, even a single point in the body must not be neglected, which is assured by the Washup.

2. The most important centres for stimulating the lymphatic system is the nasopharyngeal region behind the nose and the tonsils, and washing these spots is especially enjoined in the Washup.

3. Stimulation of both sides of the neck has great influence on the lymphatic system, and this is also present in the Washup.

Due to the above reasons, no one can come forth and claim that the Washup is not directed at the lymphatic system.

I would like to explain by means of an example how performing the Washup vitalizes the protection of the body, thus completing the divine favor.

The most formidable warrior cells of the body, the lymphocytes, are transported to the farthest reaches of the body and, after passing through intensive biological training, patrol each point in the body ten times a day. If they meet a bacterium or a cancer cell, they destroy the latter immediately. Is this not a divine blessing of the first order?

If a circulatory disorder occurs once in a while and you are able to avert this by means of your habitual Washup, is the Washup anything other than the completion of the divine bounty?

c) Washup and the Static Electricity of the Body

The body normally has a balance of static electricity, and the physiology of a healthy body is closely related to this electrical balance.

Atmospheric conditions as well as plastic clothing and products — a serious problem in our day — adversely affect this balance. Painful illnesses, irritability and facial wrinkles are the best-known results. Most of us have become aware of this electricity while climbing out of a car or sitting in a plastic chair. Stormy weather has a comparable effect.

Healing by acupuncture and, in certain respects, physiotherapy redress this imbalance of static electricity; but we can avoid this effect entirely simply by taking the Washup several times a day.

There are many psychosomatic illnesses arising from static electricity. I shall not dwell on these at length. I shall only address the question of beauty, which has become a fashionable subject in our day.

The worst influence of static electricity is exerted on the small subcutaneous muscles in muscles continually, finally renders them inoperative, which is why early wrinkles set in starting with the face. Needless to say, this is also valid for the entire body. At this point, many of my readers will have divined one of the reasons for the radiant appearance of those who take a Washup all their lives. Whoever possesses the habit of Washup inevitably has the more healthful, and therefore the more beautiful, skin.

What a miracle it is that in our day, when millions are being spent on beautification, a tenfold increase in expenditures would still not properly substitute for the Washup.

Another question: Does the Washup have anything to do with static electricity?

Of course it does. The part of the verse pertaining to the Substitute Ablution underlines the fact that the favor against this static electricity is completed. For the Substitute, too, disposes of static electricity to a significant extent.

Here we behold another Koranic miracle. For the importance of the Substitute had gone unrecognized for centuries, and no one had been able to explain why it stands in for the Washup.

As the verse clearly explains, the sanitary aspect of the Washup is a medical marvel in its own right. Of course, in our day a person can say: "I already wash my face and hands." We must not forget, however, that this habit has a history of barely 70 years, even in nations pretending to be the most civilized countries in the world. Moreover, cleanliness based on advice can never be as continuous or valid as the rigorous discipline of worship.

Naturally, the favor and significance of Washup do not end with these medical facts. Our aim in this book, however, is confined to scientific explanations alone.

THE SUBTLETIES OF CONCEPTION

إِلَيْهِ يُرَدُّ عِلْمُ السَّاعَةِ وَمَا تَخْرُجُ مِنْ نَسَبٍ
مِنْ أَكْثَامِهَا وَمَا تَحْمِلُ مِنْ أُنْثَى وَلَا تَضَعُ إِلَّا بِعِلْمِهِ
وَيَوْمَ يُنَادِيهِمْ أَيْنَ شُرَكَائِي قَالُوا أَدْنَاكَ مَا مِنَّا
مِنْ شَهِيدٍ ﴿٤٧﴾

خَمْرُ الْجِدَّةِ

To Him is referred the knowledge of the Hour. No fruit emerges from its sheath, no female conceives nor brings forth, save by His knowledge. The day when He calls to them: "Where are the partners you associated with me?", they will say: "We assure You, there is not even one witness among us."

The Subtleties of Conception

We shall try to explain a scientific marvel occurring in the middle portion of this verse:

...Without His knowledge, no fruit can separate from its rind, no female can conceive and give birth...

As in the case of previous verses, let us identify the extraordinary aspect of the verse's style. Since every event in the universe takes its origin from and through Divine Omniscience and Divine Will, why does our Dear Lord list these three biological phenomena, emphasizing that they occur only by virtue of Divine Omniscience? In order to discover this secret, it will be sufficient to take a look at the biological aspect of these events.

Let us first investigate the phenomenon of conception, which implies the pregnancy of a female.

Until recent years, the phenomenon of conception (fertilization) was considered a mundane event of biology in which the genes of the father and mother participated with equal share. As the science of genetics developed, it became clear that the event of conception was an exceedingly difficult process.

The egg cell (ovum) of the female is a unit bearing

about half the 60,000 biological traits to be found in a human being. Through a special form of cell division called *meiosis*, the mother's ovum carries half of these 60,000 traits in arbitrary sequences. These are loaded on 23 'box-cars' called chromosomes, of which there are 46 in man. I would like to outline this extraordinary event by means of an example.

Let us suppose that a human being is represented by a code consisting of 60,000 numbers from 1 to 60,000 appear sequentially, are present in the mother's cell. But the 'cards' of the mother are not ordered from 1 to 30,000: Of the cards bearing 60,000 numbers, an unordered 30,000 are present in the ovum. For example, 30,000 numbers such as the sequence: 1, 2, 3, 81, 165, 4340, 11804, 24114, 38 111, 47 617, 57 514... may be present in the mother's ovum. The traits of the child-to-be-born that will resemble the mother are thus quite arbitrary: Its eyes may not look alike while its eyebrows may, on its fingernails may not look alike whereas its fingers may.

But we must not forget one point: For a baby to be born, it is imperative that the missing 'cards' be found. These cards will naturally be donated by the father's sperm cell (spermatozoon). The father's sperms, however, likewise contain 30,000 cards in various assortments; the difference is that 250 million sperm cells are pitted against a single ovum.

Yes, dear reader; it is here that the inconceivable event begins. For the mother's ovum has to be conceived by selecting the one sperm cell with the complementary set of codes out of a marketplace of 250 million sperms, each with a set of 30,000 numbers. It has, furthermore, to accomplish this feat within an hour.

In order to place this grand scientific riddle of life in proper perspective, I want to illustrate it by means of a second example.

Suppose you are given a certain set of cards, thirty thousand of them, each bearing a number between one and sixty thousand. You are next presented with 250 million bags, and told: "The missing thirty thousand numbers from your set are in one of these bags. Find the right bag and complete your set."

What would you do?

Assuming that you could check one card per second, going through the entire ensemble would take 250,000,000 x 30,000 seconds, or more than two months.

But the ovum not only has to search for set of numbers while seeking the missing cards: It also has to determine the spatial positioning of the amino acid bases corresponding to these traits, and identify their angular relationships. And at this point we reach such an order of complexity that, if you were to assign a thousand biologists with fully equipped laboratories to the ovum about to be conceived and surrounded by 250 million spermatozoa, it still could not determine the proper sperm cell for years and years; whereas it has to complete its fertilization (conception) in one hour. Here indeed is a riddle that cannot be solved.

But this insoluble riddle is solved thousands of times a day. That is, thousands of females become pregnant.

What is the conclusion to be reached on the basis of this lengthy explanation?

It is impossible, within the bounds of normal biological laws and knowledge, for a female cell to select its missing

genetic cards in order to become pregnant. That is, the rational science we all know of tells us that—

No female can become pregnant!

Verse 47 of Chapter 41 makes the same declaration 15 centuries in advance, saying, in effect: "O Mankind, it is only through My Will and science that the female ovum is able to decipher this incomprehensible riddle."

Faced with this verse, modern science can only nod its assent. Even in the case of this single verse, the science of biology follows in the footsteps of the Koran, having only recently been able to approach the secret declared therein 14 centuries ago.

This miracle of the divine, dear reader, is so important that it displays the existence of the Divine Omnipotence for all to see, while simultaneously demonstrating the scientific portent of the Koranic verses.

The phenomenon of conception is the inevitable acknowledgement of 'the Witnessing' by science.

Here's how:

If God —God forbid— did not exist, science clearly tells us that no female could become pregnant. But thousands, and if all living things are considered, millions of females become pregnant every day. Hence:

"I bear witness that there is no god but God."

Further, the Koran, revealed 14 centuries ago, announces this fact as a scientific marvel, in unequivocal terms. Therefore:

"I bear witness that Mohammed is the Prophet of God."

I now come to the second secret dealt with in this verse:

"No female can conceive without Divine Omniscience."

For birth to occur after conception, this single fertilized cell (*zygote*) must be transformed into a baby. What kind of scientific phenomenon is this?

The zygote subdivides in a geometric series of 2, 4, 8, 16..., until a baby consisting of thirty billion cells is reached. However, in this series of divisions, the 60 000 traits have to occupy a definite position in space. When the number of cells reaches 256, for example, the color of the eyelashes and the cartilage of the ear have to determine where in these 256 cells they are going to exist. For instance, the epidermal trait of the tongue and that of the kidneys may coexist in adjacent locations in Cell No.221. If there were to be an error of even 1 Angstrom (ten millionths of a centimeter) in the distance between them, urine would be secreted by the human tongue, or the tongue of an unbeliever might protrude from his belly.

The chances that these traits will progress free of error within this geometrical order in passing from one cell to 30 billion cells is 6×10^{-32} . Further, the chances that a certain trait will occupy the proper space, position and order in a certain cell at each division are 6×10^{-128} , which is mathematically equivalent to zero. It is impossible, in other words, for a fertilized egg to become a baby without the art of divine science.

And what of the command to start labor? What scientific committee informs the mother's pituitary that the baby's biological structure is completed when the 40-week pregnancy period is over? Which research laboratory has

informed the pituitary in the mother's brain that all the systems of the baby have now matured so that the order for births has been issued?

What else but Divine Omniscience?

Indeed, very rare events such as premature births, malformed babies, and the inability of labor to commence in spite of the completion of pregnancy, are all admonitions and warnings to mankind, reminders of the biologically miraculous nature of pregnancy and childbirth.

WATER AND VITALITY

●

أَوَلَمْ يَرِ الَّذِينَ كَفَرُوا أَنَّ السَّمَوَاتِ وَالْأَرْضَ كَانَتَا رَتْقًا
فَفَقَعْنَاهُمَا وَجَعَلْنَا مِنَ الْمَاءِ كُلَّ شَيْءٍ حَيٍّ أَفَلَا
يُؤْمِنُونَ ﴿٣٠﴾ الْاِنْشَاء

Do not the unbelievers see that the heavens and the
earth were joined together before We clove them
asunder, and of water fashioned every living
thing? Will they not then believe?

Water and Vitality

(Have they not considered that) We have fashioned all living things from water? Do they still not believe?

In this section we shall try to interpret the latter part of Chapter 21, Verse 30. I shall explain the beginning of the verse pertaining to space in another section (Topic 20).

As can be seen, the phenomenon of life has to be known before this verse can be understood.

The definition of an organism has varied incessantly until the second half of the twentieth century. After James D. Watson's discovery of the role of DNA, the basic unit of organisms was recognized and a more precise definition of an organism became possible. Since 1950, life has become known as the ability to replicate the DNA originally present in an organism.

There is a nuance between life and vitality. Life is a structural characteristic, while vitality is a function of this characteristic. This concept, which is a bit difficult to understand, may be more readily comprehended by means of an example.

Some viruses and certain bacteria in the soil cannot exhibit their functions due to environmental circumstances. That is, they cannot move and do not reproduce, as if in

suspended animation. Under appropriate conditions, they regain mobility and begin to reproduce. Now life represents both the dormant and active states of the virus or bacterium, while vitality stands for its period of activity alone.

The word occurring in the verse is 'the Living', which corresponds to vitality. I have earlier had occasion to point out that the words in Koranic verses embody very significant secrets.

Let us now return to the verse. The exact meaning of the verse is: *"We have brought forth all living things from water."*

Let us identify the significant points in the verse:

a) 15 centuries ago, the concept of life was accepted for animals. Among certain scientific circles, plants were also included in this category. The verse, on the other hand, quite clearly expresses something beyond the concepts of 'animal' and 'vegetable': The definition of "all living things (objects)" points to the fact that vitality covers many varied beings with the concept of "thing (object)". The Koran, with this single expression, has allowed the concept of vitality sufficient breadth to cover viruses and DNA molecules, and had thus expressed a scientific fact 14 centuries in advance.

b) Vitality has arisen from, has gained power from water. The verse does not say "created" (*halagna*); but "empowered" (*waja'alna*).

c) After this, the verse ends with the declaration *"How can they still not believe"*, directed at unbelievers. This is addressed especially to the unbelievers of our age, for it is only thirty years since the indispensability of water to vitality has been recognized.

Let us now investigate why water is the basic condition

for vitality within the context of the most recently discovered rules of biology.

We have already seen that the basic unit of life, i.e. its representative, is a molecule known as DNA. Vitality consisted in this molecule alone, and if this molecule had developed from the molecules of water, the verse would have read: "We created all living things from water." Vitality, on the other hand, is the construction of a new and identical molecule using organic chemicals from the original.

Modern biology has determined that this addition is made possible through the H^+ and OH^- ions of water molecules. In particular, the H^+ ions of water are used to synthesize ATP, a compound of phosphorous, and amino acids and ribose sugar. Experiments performed with radioactive hydrogen (tritium) have shown that DNA molecules take the hydrogen ion exclusively from water. The same experiments have demonstrated that a hydrogen ion we call "mobile hydrogen" creates a continuous electrical field between ribose sugar and amino acid nuclides, thus constituting the basis on which vitality is maintained. As I have also mentioned in the topic of rain, vitality is activated when these electrical fields influence bacteria in a living but dormant (static) state; that is, the bacteria become operational, beginning to move and reproduce.

This principle is the same for all organisms. That is to say, cells can continue their activity only by virtue of hydrogen. Research in cellular chemistry has shown that all electrical processes are sustained through lysosomes and water ions in the cell. Again, all chemical processes are carried out through the medium of water ions in the cellular laboratories we call mitochondria.

Experiments made with "heavy water", where hydrogen is replaced by one of its isotopes, have also

established that a water molecule remains in the body for 7-14 days and then is ejected, being replaced by fresh water ions which will contribute renewed vitality. For this reason, organisms cannot tolerate dehydration.

The relationship between water and vitality, however, does not end at this point. In general terms, energy is needed for the continuation of vitality. This energy is obtained by the exchange of ions. The intake of food leads to an activity akin to the production of electric power by the chemical combination and dissociation of certain molecules. In all these energetic processes, the H^+ and OH^- ions in the cell provide the basic medium of exchange, like money or foreign medium of exchange, like money or foreign currency. A cell is healthy if the water ions within it and surrounding it are balanced. Otherwise, it is either diseased or dead.

Water, therefore, is the basic element not of genesis and life, but of vitality. And the verse expresses this subtlety so beautifully that it is not possible to ignore this Koranic miracle either. It reemphasizes the same fact by stating: *"How can they still not believe?"*

The respiration of cells ("Krebs respiration"), that is, the consumption of nutrients, is a special phenomenon of ion exchange which is also profoundly tied in with water ions. The profound connection between water and vitality has still not been unravelled satisfactorily. For instance, electrochemistry and biochemistry cannot explain why water molecules become useless after a certain period. Further, the way in which a cell stores water is still not properly understood. We only know that the use of table salt or sodium chloride (NaCl) in the cell is aimed at absorbing and accumulating water molecules there.

Indeed, each organism uses water just like currency in

its tiny laboratory. For this reason, there are special hormones produced by glands in our bodily system which regulate intra- and intercellular water exchange. Many centers of the body are in computerized communication with these secretory glands. Excessive water is ejected prior to fever, which indicates that war is being waged by the body, making life difficult for bacteria. Our bodies do not give microbes a chance to live, as if in consciousness of the secret of this verse.

Such are the profound meanings hidden within the divine ordination, *"We created all living things from water."*

THE DAY WILL COME WHEN
EVERYONE WILL FAST

يَا أَيُّهَا الَّذِينَ آمَنُوا كُتِبَ عَلَيْكُمُ
الصِّيَامُ كَمَا كُتِبَ عَلَى الَّذِينَ مِنْ قَبْلِكُمْ لَعَلَّكُمْ
تَتَّقُونَ ۝ أَيَّامًا مَعْدُودَاتٍ فَمَنْ كَانَ مِنْكُمْ
مَرِيضًا أَوْ عَلَى سَفَرٍ فَعِدَّةٌ مِنْ أَيَّامٍ أُخَرَ ۝ وَ
عَلَى الَّذِينَ يُطِيقُونَهُ فِدْيَةٌ طَعَامُ مِسْكِينٍ ۝
فَمَنْ تَطَوَّعَ خَيْرًا فَهُوَ خَيْرٌ لَهُ ۝ وَأَنْ
تَصُومُوا خَيْرٌ لَكُمْ إِنْ كُنْتُمْ تَعْلَمُونَ ۝

النقرة ٢

O believers: Fasting, as it was prescribed for those before you, is prescribed for you for a fixed number of days, that you may be Godfearing. Any of you who is sick or on a journey will make up for the prescribed number of days on other, later days. For those who cannot withstand its hardships, the ransom is to feed a poor man. Whoever does good voluntarily, that good is neglected back on him. And did you but know, fasting is better for you.

The Day Will Come When Everyone Will Fast

If you perceive the truth, it is better for you to fast in spite of all its hardships.

We all know that four verses (Verses 183-187) in the Chapter of the Cow enjoin fasting, one of the main observances of our religion, and detail its conditions. We shall explain the truths underlined in the last part of Verse 184 from a medical point of view. This part emphasizes the fact that fasting is a good thing, yielding many beneficial results for us. It is declared that we can comprehend these blessings only if we can perceive the truth.

Until quite recently, fasting was regarded as nothing but a rest for the digestive system. As the medical sciences advanced, it was gradually realized that fasting is a medical marvel. This is why the last sentence of the verse begins with: *"If you perceive the truth."*

Let us now summarize, as we have done for earlier verses, what fasting contributes to our health in scientific terms.

a) The Influence of Fasting on the Digestive System

The digestive system, as everyone knows, is composed of a crowded family of organs. Important organs such as the salivary glands in the mouth and jaw, the tongue, throat, alimentary canal and stomach, the duodenum, liver and pancreas, and various sections of the intestines are all components of this system. A significant aspect of this system is that all these complex organs are automatically controlled by a computerized order. As one starts to eat, or even with the intention to do so, the entire system is triggered, each part according to its own function. Needless to say, this system is subjected to wear since it is in duty 24 hours a day, and often as the result of nervous strain and malnutrition.

Fasting, then, is a one-month period of rest imposed on the totality of this system. But the truly marvelous effect of fasting is on the liver. For the liver, besides its digestive role, has fifteen other functions. It is worn out just like a guard on duty all life long. Because of this, the secretion of bile for digestive purposes leads to problems of interference with its other functions.

During fasting, on other hand, the liver can rest for 4-6 hours. For the reasons explained above, diets other than fasting are insufficient, because once a food particle as small as the tenth of a gram has entered the stomach, the computer of the digestive system is activated and the liver immediately starts functioning. From a scientific point of view, it can be claimed that this period of rest should comprise one month per year.

Contemporary man, placing an inordinately high value

on his life, tries to feel secure by having frequent checkups. Yet if a liver cell were endowed with speech, it would surely say: "The best thing you can do for me is to fast."

Another service of fasting to the liver involves the chemistry of the blood. One of the most difficult tasks of the liver is to maintain balance between ingested food and food that is burnt up. It has either to store each morsel, or to supervise its consumption via the blood. In fasting, on the other hand, the liver is relieved of its nutrient-storage duties to a great extent, and can devote its energies to the production of globulins which reinforce the immune system during this spell. The restful effect of fasting on the throat and esophagus, both of which are considered to be very sensitive organs, is likewise a priceless gift.

All of the effects the stomach derives from fasting are beneficial. The secretion of all stomach fluids is tempered. Because of this, acid is not accumulated during fasts even though ordinary hunger results in hyperacidity, for acid secretion is interrupted with the intention to fast. In this way, the muscles of the stomach and its secretory cells are relaxed during the month of Ramadan. Contrary to the claims of those who have never fasted in their lives, a healthy stomach performs successful digestion when the fasts is broken in the evening.

Fasting also provides relaxation to the intestines, both in terms of secretions and of muscular movement. Beneath the endothelium of the intestines are a basic constituent of our immune system, the Peyer plaques. These plaques are subjected to a thorough renewal during fasts. We are thus protected against all the illnesses that assault the digestive tract.

b) The Benefits of Fasting to the Circulatory System

Blood volume decreases during the daytime in fasts. This effect provides valuable relief to the heart. More importantly, the decrease of intercellular fluid results in a reduction of tissue pressure. Tissue pressure, or diastolic pressure as it is more commonly known, is of great importance to the heart. Diastolic pressure is always low during fasts, so that the heart is relaxed. Further, modern man is afflicted by hypertension arising from various living conditions. Fasting for a month every year reduces diastolic pressure in particular.

The most important influence of fasting on the circulatory system is that exerted on the blood vessels. It is common knowledge that one of the main reasons for the attrition and aging of blood vessels is the inadequate burnup of food remnants. In fasting, on the other hand, and especially when the breaking time for the fast approaches, all nutrients in the blood are utilized and no remainder is left. Therefore, fats and similar leftovers are not deposited in the arterial walls to cause constriction. Hence, fasting is also the best precaution against arteriosclerosis, one of the main health problems of our time.

Since the kidneys — which may be considered as part of the circulatory system — are also rested during fasts, another very important organ is restored to health by fasting.

c) The Effect of Fasting on Cells

The effect that has the greatest influence on cells is the regulation of equilibrium in intra-and intercellular fluids.

Since intercellular fluids are reduced to a minimum in fasts, a significant relaxation of cellular functions occurs. Again, the epithelial cells which are responsible for continuous secretion in the body are afforded a significant rest and hence, restored to health during fasts. Speaking in cytological terms, the pituitary, thyroid and pancreas glands eagerly await the month of Ramadan, at least in order to catch their breath.

d) The Effect of Fasting on the Nervous System

It should clearly be understood that the ill temper and withdrawal reactions observed in some people during fasting has nothing to do with the nervous system. This condition is a reaction arising from the Despot (or Egotistic) Self. On the contrary, the nervous system is in complete relaxation during fasts. The satisfaction of fulfilling a worship removes almost all our tensions and bad temper. With a more earnest surrender, even our worries are dissipated. In this way stresses, which are a serious problem in our day, are dispelled almost entirely.

Our separation from sexual desires during fasting also removes many negative influences from the nervous system.

The circulation in the brain, which is restored to a rigorous harmony through the joint effect of fasting and Washup, becomes a clear indicator of the healthy nervous system. As I have mentioned earlier, the rest afforded the internal glands — which are influential over the entire nervous system — is another of the benefits of fasting on that system.

The subconscious, which is purged and soothed through the felicity of worship during Ramadan, erases all tensions from the nervous system.

e) Blood Formation and the Subtleties of Fasting

Blood is formed in the marrow of bones. Whenever blood is required in the body, a reflex stimulates the bone marrow. The bone marrow is sluggish especially in lean and anemic persons, as well as in urban dwellers. For this reason, 'palefaces' are on the increase every day.

During fasting, when nutrients in the blood fall to a minimal level, the bone marrow is stimulated. As a result, such anemics produce blood more easily when they fast. (Needless to say, persons with serious blood disorders will consult a doctor and have their medical checkups.) Since the liver is rested in fasting, it can prepare the materials needed by the bone marrow for blood production more easily and in greater quantity.

As a result of these multifaceted biological subtleties of fasting, lean persons gain weight when they fast. On the other hand, obese people lose weight because of the beneficial effects of fasts on overall health.

Yes, kind reader: Let us now recall the last sentence of Verse 184, and experience the joy of the Koran's divine miracle:

"If you perceive the truth (i.e., if you know the true biology of the body), it is better for you to fast in spite of all its difficulties."

THE THREE DARK ZONES IN THE
MOTHER'S ABDOMEN



خَلَقَكُمْ مِنْ نَفْسٍ وَاحِدَةٍ ثُمَّ جَعَلَ مِنْهَا زَوْجَهَا وَانزَلَ
لَكُمْ مِنْ الْأَنْعَامِ ثَمَنِيَّةً أَزْوَاجًا يَخْلُقَكُمْ فِي بَطُونٍ أَمْهَاتِكُمْ
خَلْقًا مِنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ ذَٰلِكُمْ اللَّهُ رَبُّكُمْ لَهُ الْمُلْكُ
لَا إِلَهَ إِلَّا هُوَ فَآفَى تُصْرَفُونَ ① الزمر

He has created you from a single Self, then formed
his mater; He has sent down for you eight head of
cattle in pairs; He has created your mother's wombs in three
kinds of darkness, passing from one genesis to the next;
such is God, your Lord...

The Three Dark Zones in the Mother's Abdomen

He continually creates you in your mother's wombs in three darknesses, passing from one genesis to the next...

Since this part of the sacred verse expresses an important biological secret, I shall attempt to explain only this section of Chapter 39, Verse 6.

As can be seen, this part of the verse defines three different darknesses for the formation of a human being in the mother's abdomen. Therefore, it expresses the fact that the fertilized egg cell, or *zygote*, passes through three dark phases. Fifteen centuries and indeed even a century ago, it was thought that the human being developed only in the womb in the mother's abdomen, that is, in a single dark zone.

In order to enable an understanding of this verse, I would like to summarize the development of a human being in the wombs as known to modern medical science.

An egg cell or *ovum* which matures in the mother's ovaries does not, as might be expected, fall into the womb. On the contrary, it is delivered into the pelvic cavity. There are two thin tubes, called the Fallopian or uterine tubes, to

the right and left of the upper part of the maternal womb or *uterus*. The ends of these tubes bloom like flowers towards the pelvic region, thus surrounding the ovaries. As soon as the ovum falls into the pelvic cavity, the flowerlike orifices of these tubes catch and draw in the ovum like suckers, admitting it into a tube at its remote end from the uterus. The ovum is fertilized in this tube. After a certain period, it is carried through the length of the tube and arrives in the womb. The internal epithelial lining of the uterus covered with hairlike protrusions called *villi*. From the standpoint of the ovum, this can be compared to a secluded spot beneath the trees of a forest. The zygote continues its mitotic cell divisions, or cleavages, for a period in this environment, and then forms the embryo within a noncellular capsule (the *zona pellucida*).

As can be seen, contrary to initial expectations, the formation of a human being in the maternal womb passes through several stages.

We can now decipher the very subtle meaning of the sacred verse. Let us try to identify the three dark regions in the mother's pelvic cavity in biological terms.

a) The First Dark Zone

This is the first phase after the ovum becomes fertilized in the Fallopian tubes (*salpinx*). The beginnings of corporeal life are experienced by the zygote in this first dark zone.

Exactly why the ovum is fertilized in this tube remains as yet inexplicable. In our conception, as I have explained in earlier verse interpretations, the fertilization of the ovum is an incredible mathematical phenomenon. It is through the choice of the Divine Will that this event takes place in this

tube, the most quiescent spot in the mother's abdomen. In addition, the genetic codes of the father and mother are combined here under the same favorable circumstances, and the first bodily form of the human-to-be-born is also assumed in this location. In accordance with the meaning supplied by the sacred verse, our first form arises in this dark region.

This tiny human cell in which everything is ready carries all the details of our adult life. It will henceforth be transported to the second dark zone in order to complete the ordained bodily structure, and will complete the divine code by obtaining whatever materials it needs from the inexhaustible food supplies of the womb.

At this point I would like to comment shortly on "test-tube babies", information about which has been incorrectly received by many.

The uterine tube which is essential for fertilization sometimes happens to be clogged due to an inflammation. For this reason, fertilization and hence, pregnancy do not occur. Therefore, fertilization is realized in this case by removing the ovum from the mother's pelvic region and mixing it with the sperm cells of the father in the laboratory. This has become known in the medical language as the "test-tube baby" phenomenon. And in fact, the test-tube baby event is a Koranic miracle in light of the fact that the first dark zone referred to in this verse is thus revealed to humanity.

However, certain unbelievers have abused the test-tube baby concept by propagating the impression that the embryo is developed in the laboratory. This is completely untrue. The ovum which has been fertilized outside is again implanted in the uterus and continues its development therein.

Returning to our subject, the baby which has been fertilized in the uterine tubes now arrives in the second dark zone.

b) The Second Dark Zone

The fertilized ovum arrives over the intrauterine epithelium (*endometrium*), the second dark zone resembling a forest. It becomes implanted in and adheres to a suitable spot. This location is formed into a nutritive tunnel for the future baby by the mother's body.

The zygote performs its first cleavages here. These initial divisions are extraordinarily important, because the rudiments of all organs are formed in the second dark zone during this first phase of the embryo. Indeed, the zygote constitutes the first stage of genesis, while these initial cell divisions constitute its second stage. The most formidable of genetic events, the harmonization of traits, has occurred in the first zone, whereas the first basic structures pertaining to the various organs are formed in the second region.

In the second genesis (*organogenesis*) in this second zone, the entire human body is represented in the clusters of cells. "Blood-clot tissue" would be a good definition of its present condition, and in fact the Koran refers to this tissue phase as the "blood clot" phase in other verses. We shall touch upon this subject in future verses.

At a certain point in this tissue phase during the development of a human being in this second darkness, a new dark phase begins for the embryo which originally appeared as a single tissue.

c) The Third Dark Zone

A sac, the amniotic sac containing a special fluid, forms around the embryo, and then our organs and physiological systems develop within this sac in a third dark space. Thus, the development of a human being in different locations in the mother's abdomen is a three-fold story. To all external appearances, the differences between these dark locations are indiscernible. However, if we were to explore these locations in the guise of a small cell, we would immediately perceive how different they are. From the point of view of such a cell, the first dark location is reminiscent of a gigantic dark tunnel, while the second dark location is similar to a black, lightless forest, and the third dark location to the bottom of a pitch black sea.

The sacred verse — the verse revealing all these scientific facts which we have only recently discovered as the precise secret of a biological miracle — discloses the secret of genesis in its entirety. And then it ends with the challenge: "How can you deny?" It is surely a sign of the Koran's grandeur that this verse has presented the story of a human being in the mother's body 15 centuries ago, at a time when no fact of embryogenesis was known.

The transport of the human being from one of these locations to another is itself an incomprehensible mystery of genesis. The transfers from the cell phase in the second dark region and from there to the organ phase within the amniotic sac occur as if programmed by a computer. The phase completing its development automatically passes over to the next location. The expression in the verse of "passing from one genesis to another" is a statement of this fact.

TOPIC 16.

THE KORAN FORETELLS OXYGEN

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الَّذِي جَعَلَ لَكُم مِّنَ الشَّجَرِ الْأَخْضَرِ نَارًا فَإِذَا أَنْتُمْ مِنْهُ
تُقَدُّونَ ﴿٨٠﴾ فَيَسِّرُ

He has produced for you fire out of the green tree,
from which you kindle.

The Koran Foretells Oxygen

As we all know, this verse of the Ya Sin Chapter is a divine declaration against the distorted logic and rebellion of man: "Is rotted, shattered **bone** going to be resurrected?"

Beginning with Verse 78, the Ya Sin Chapter gives expression to divine miracles and powers. Verse 80 is revealed as divine proof for the Resurrection. As we have pointed out in the interpretation of earlier verses, the commentaries of former times provide various renditions for this verse, all of which command respect. However, we have to search for a marvel equivalent and parallel to the resurrection of shattered bone in this verse.

It was impossible 14 centuries ago for unbelievers to understand the stupendous biological secret this verse contains, for the inside story of combustion was not known. Centuries later, it was discovered that combustion occurred by the combination of oxygen with the carbon in burning material. Subsequently, it was found that oxygen was produced by plants and green trees.

The main substance of combustion is produced by green trees. The event we term 'fire' consists of oxidation: There can be no combustion without oxygen. Fire, therefore, implies oxygen emerging from the green tree.

We can now reread the verse:

"The fire you kindle arises from green trees."

Even from this single viewpoint, the verse, in an unfathomable miracle, presents oxygen and its creation 14 centuries in advance. It is inevitable that any chemist or biologist having some respect for science should be inspired with faith upon reading Verse 80 of the Ya Sin Chapter.

The verse, however, conceals even more profound scientific truths, for it sheds light on the Resurrection on Judgment Day. I shall now summarize these facts of science.

a) The verse reminds unbelievers who — looking at bones reduced to dust — wish to make fun of the Judgment, of a very deep fact of science. It says:

"You think everything is over once you burn something, an operation even more drastic than the pulverization of bone, for an organism that burns is reduced to lifeless carbon dioxide. However, the green tree will take that carbon dioxide gas and produce from it one of the basic components of organisms, namely, sugar; and this sugar, being finally transported to another organism, gives life to it. Further, in producing sugar, that plant also yields oxygen for you to burn."

A basic law of biology is unveiled here: God produces fire (oxygen) out of plants, which we burn. This reminds us of the phenomenon of biosynthesis and of the fact that vitality consists in a valence change of carbon, emphasizing that this is accomplished with ease by Divine Omniscience. Thus, the verse says:

"Stop looking at those rotting bones, and perceive the

divine secret of biosynthesis. Behold how easy it is for Me to give life."

b) A second insight in giving green trees as an example is its declaration, in effect, that: "Don't you see that when that tree dried up, it is no different from rotted bone? And that I give life to it in spring when I wish, making it produce oxygen for you to burn?"

As a matter of fact, the secret of "the Living" in the soil is the greatest proof for the Resurrection on Judgment Day. As I have indicated while interpreting earlier verses, the soil first analyses each dead organism that it receives in its magnificent laboratory; i.e., it breaks it down into its basic components. The "laboratory technician" in the soil then performs such a synthesis using microbes that new plant life, even life in the general sense, sprouts from it. The example of oxygen-producing green trees is an in-depth course in biology, giving expression to all these facts.

Vitality and resuscitation is a secret of 'the Living' inspired by God in the soil. When the divine command comes, that rotted, pulverized bone, too, will achieve a flawless resurrection.

c) Another subtle insight in answering by trees a question asked for bone is that both carry the basic secrets of vitality. Bone and its marrow possess the secret of producing blood cells and keeping vitality going. As for green trees, they produce fire (oxygen) and thus, one of the basic substances of life on earth.

The facts listed in these three items are cemented by the command: *"Glory to Him in whose hands is dominion over everything"* very clearly in the last verse of the same chapter.

In the light of these scientific facts, we observe with greater pleasure the reason why the Ya Sin Chapter is recited to the dying and the dead.

As is proclaimed in the 'Detailed Explanations Chapter, one of the outstanding characteristics of atheists is their unbelief in the Last Judgment. Disbelief in the Day of Reckoning always results from a misinterpretation of the phenomenon of death. The present verse gives utterance to the real truth of death, or biological transformation, by using the example of fire emerging from green trees. In biological terms, death is simply the alteration of the valences of chemical substances forming the basis of organisms.

We observe that the organisms, plants, animals and bacteria seen in the world are always in a process of change or death. But a dying insect, for example, is analysed in the laboratory of the soil, finally being transformed into a flower; and from these flowers many other insects find life and sustenance.

The phenomenon of burning represents the total destruction of an organism; it is destroyed in the 'hard' way by combustion. But the carbon dioxide released by its smoke becomes the symbol of new life in the leaf. In order to express this insight, the subtlest secret of biology, Verse 80 gives the oxygen (fire) produced by the green tree as an example. We must clearly understand this explanation, which may look like a repetition. In fact, the last page of the Ya Sin Chapter reveals all the secrets of Genesis, of Creation. Indeed, Verse 77 declared, *"Does not man see that We have created him from a sperm drop?"* expressing human biology from its beginning, and Verse 80 reconstitutes the biological connection with the announcement in Verse 79 that *"He is the All-creator, the All-knowing, with infinite knowledge of Creation."*

"Therefore, O Man, you view the green tree as a symbol of freshness. But it is a factory of fire, and God makes it produce oxygen, the basic source of energy for life."

No atheistic opinion can survive in the face of this insight. It can neither give any further examples of rotted bones, nor have any further doubts about the Judgment.

After this stupendous revelation, God expresses the creation of the worlds in Verse 81, and then explains His magnificence by declaring: *"His command, when He desires a thing, is to say to it 'Be', and it is"* in Verse 82.

We can now appreciate much better the meaning of reciting the Ya Sin Chapter to believers approaching the end of their lives.

A person about to pass away into another world begins to perceive many truths. When you present him with the glad tidings of the Judgment within the grand harmony of the Ya Sin Chapter, he will enter that other world with a smile on his lips. What a beautiful aid this is for a person breathing his last! To remind him of life, of oxygen emerging from the green tree, and to dispatch him to the next world and to Judgment with the joy that only Faith can give.

THE MASTER RECKONER: THE BEE

وَأَوْحَىٰ رَبُّكَ إِلَى النَّحْلِ أَنِ اتَّخِذِي مِنَ الْجِبَالِ بُيُوتًا وَمِنَ
 الشَّجَرِ وَمِمَّا يَعْرِشُونَ ﴿٦٨﴾ ثُمَّ كُلِي مِن كُلِّ الثَّمَرَاتِ فَاسْلُكِي
 سُبُلَ رَبِّكِ ذُلُلًا يَخْرُجُ مِنْ بُطُونِهِنَّ شَرَابٌ مُّخْتَلِفٌ أَلْوَانُهُ
 فِيهِ شِفَاءٌ لِلنَّاسِ إِنَّ فِي ذَلِكَ لَآيَةً لِّقَوْمٍ يَتَفَكَّرُونَ ﴿٦٩﴾
 النحل ٦٨-٦٩

And your Lord suggested to the Bee: "Take unto yourselves homes in mountains, trees and ready-made hives. Then eat of all manner of fruit, and follow the easy paths of your Lord." A drink of diverse colors issues from their bellies, wherein is healing for men. Surely in this is a sign for a people who reflect.

The Master Reckoner: The Bee

As we know, this long chapter, composed of 128 verses, takes its name from the honey bee (*nahl*). The subject of bees and honey must, therefore, contain deep scientific insights.

Many such insights are included in this chapter. However, the articulation of milk (Verse 65) and honey (V. 69) in close succession in this chapter emphasizes the incomprehensible secrets of these two basic and wonderful foods of man. So, to start with the final sentence of the verse, "*There is a sign in it for a people who reflect.*"

Let us now take a look at the scientific insights provided by bees and honey.

a) The honeycomb: The home of bees, a great work of art constructed of hexagonal prisms, is a masterpiece of architecture that can only be built by divine inspiration. This geometrical choice represents the best utilization of architectural space, the enclosure of the greatest volume with the least material. Further, the resins constituting the basic construction material have been chosen with care to conform within human health.

b) The swarming of the bee is itself an extraordinary

tale. By using special and variegated sound waves and their echos, the bee both completes its deployment and finds its way back to the hive. This truth is designated as a special facility in the sacred verse, Books have been written devoted solely to the pathfinding, hive-making activities and lifestyle of the bee, to which interested readers may refer for details.

c) The composition and properties of honey: It is known from its hive architecture what a master reckoner the bee is. The physical subtleties of its life story, carried on by sound waves, are also obvious. But does the bee produce honey for its own sake? No; for even a hundredth of the honey would be too much for it. Is it conceivable that such a good engineer and architect as the bee can make an error in producing honey, mistakenly manufacturing it vastly in excess of its needs?

Some atheists have claimed that fruit is produced by a plant in order to guide animals to its core. We shall address this ignorant view in future topics. However, the case of the bee does not admit of even this untenable view. For the bee is not in need of another organism; why then should it produce excess honey? Therefore, as the verse explains, honey is a gift of the Divine to human beings.

a) The Subtleties in the Composition of Honey

An organism requires sugar and starch as the basic foods for subsistence. It obtains these from various plants, and generally utilizes them as fuel to obtain energy. A small part is used in producing ribose, the basic substance of DNA.

Ribose is a kind of cyclic sugar. It is one of the basic structural materials of the organism, and perhaps the most

important. Now among all foodstuffs, it is only honey that contains ribose. When the body is in particular need of manufacturing new cells — after illnesses, during growth and in blood fabrication — ribose is very valuable for it. The marvel is that since reproduction is prohibited for all bees except the queen bee, the bee has absolutely no use for ribose.

All soluble vitamins are present in honey. More importantly, it contains vitamins B13, B14 and Bt, which are not present in other foods, and are thought to exist in the livers of organisms. These vitamins play some mysterious part in the production of DNA by the cell. Honey also contains other vital substances, such as all phosphorous enzymes and folic acid.

b) Royal Jelly

There is a special growth and synthesis hormone in honey, which is considered to be one of the most enigmatic of biological substances, and is called 'royal jelly' by the public. This hormone is prepared for the queen bee. Upon ingesting it, the queen bee grows to several times its previous size. However, the amount of hormone secreted is several hundred times that required by the queen bee. Furthermore, all other bees are prohibited from eating this hormone. Therefore, the bee produces this extra hormone not because it miscalculates, but in order to serve humanity in accordance with the Divine Will.

Because of the presence of this hormone in honey, the latter is an unsurpassed remedy for all chronic illnesses and for anemia.

At this point, I would like to mention that anemics

used to be fed spleen cooked rare as a cure. However, neither spleen nor liver is an effectual cure against anemia. On the contrary, the modern diet for anemia consists of uncooked green vegetables, honey and olive oil (since it contains vitamin E). The latter is itself a miracle of the Koran, since the first verse of Chapter 95 (The Fig) makes explicit mention of the olive.

c) Other Substances in Honey

The bee collects many substances of therapeutic value from various fields and plants, and imparts these to honey. For this reason, the kinds of honey produced in different regions are beneficial against different illnesses. These substances have healing properties especially where nervous and coronary ailments, chronic bronchitis and the stomach inflammation called gastritis are concerned. The remedial secret of honey declared in the verse is closely related to these substances.

Let us now review the subtleties in the sacred verse. I would like to start explaining the hidden insights with the last sentence of Verses 68-69.

a) *"Surely in this is a sign (a marvel of science) for a people who reflect."*

So we are urged to make an in-depth inspection of the secrets of bees and honey. For man, although he is very curious to learn the mysteries of the universe, reaches wrong conclusions and lands in rebellion on the basis of many events. But if the story of bees and honey is inspected with care, the true insights will concretely manifest themselves. As I have had occasion to mention, it is a marvel that bees produce honey hundreds of times in excess of

their needs, despite their computational abilities rivalling those of an engineer and their communication by ultrasonic waves (both of which facts are openly declared in Verse 68). The confusion in the atheistic claims of our day stems from the interpretation of the whole world as one vast coincidence, whereas the fact that God causes bees to produce honey for man is enough to silence the most stubborn atheist. This is why the sacred verse ends with: *"There is a sign in bees and in honey for a people who reflect."*

b) The second fact that the verse expresses is found in its emphasis on the healing properties in different kinds of natural honey. The expression: *"a drink of diverse hues"* in Verse 69 points to the differing chemical substances in honey. Some of these are chemicals with medical properties. Of the substances in honey, the growth hormone (royal jelly) is white, fructose translucent, ribose light yellow, and vitamin B2 yellow. Certain resins and curative chemicals are orange. Some compounds of phosphorous and certain ferments have the appearance of viscous fluids.

Again, the sacred verse uses the expression: *"issues from its belly"* in order to underline the fact that the bee does not expel these materials as they are, but that it processes the chemicals it has gathered from flowers.

c) The healing effect of honey: The therapeutic effects of honey are so well-known that they are not the subject of medical controversy. As we have mentioned at the beginning, these effects have multiple aspects, which I would like to summarize below.

d) Effect on Cell Regeneration

Honey is beneficial in all chronic illnesses, and especially in chronic rheumatism, anemia, general weight defi-

ciency, gastric and duodenal ulcers, epidermal illnesses of long standing, and the period following fevers which we call 'convalescence'. This effect of honey is due to ribose, phosphorous, folic acid, and all the soluble vitamins and enzymes it contains. Royal jelly also reinforces this effect, provided it is ingested together with honey.

e) The Properties and Effects of Honey Collected from Different Regions

In regions where there are pine forests, the bee adds very powerful sedative substances to honey. In other regions, it provides substances that fortify the heart. It should not be forgotten, however, that the group B vitamins and the ribose and levulose sugars that honey normally contains are the vital nutrients of the cardiac muscle. It is also known that the special nervous system of the heart derives extraordinary benefits especially from the group B vitamins and phosphorous. Further, the phosphorous, ribose, folic acid and group B vitamins present in the normal composition of honey provide invaluable food for the brain.

d) A very important point in this verse is the discrimination made between intuition and divine inspiration. Intuition, which I have tried to present in various books as a reflection of Universal Consciousness (or Universal Mind), is the pattern of behavior that organisms obtain from the Universal Mind in order to continue their lives. The bee, however, receives a special, divine inspiration in order to serve man, and with this secret produces honey like a mind-boggling pharmaceutical and biochemical factory.

It is proclaimed in the Koran that various organisms and even nonliving matter are guided by such reflections of

divine inspiration. God assigns various tasks to organisms with a special divine inspiration different from the intuition He normally bestows. Divine Omniscience, as a requisite of its sacred art, may thus teach mysterious secrets to a bee — a mere insect — if it wishes, and create unfathomable miracles.

The bee, a source of inspiration to engineers, is one of the creatures endowed with this secret. And the verse reveals that Divine Omnipotence possesses a meaning far surpassing the brain of a bee, which is not even the size of a pinhead. This is why this great chapter has been named "The Bee" (*nahl*). It is as though the honey bee stings the tongues of all atheists, materialists and unbelievers with its secrets.

TOPIC 18.

ALCOHOL: THE FINAL ENEMY OF CIVILIZATION

يَسْأَلُونَكَ عَنِ الْخَمْرِ وَالْمَيْسِرِ قُلْ فِيهِمَا إِثْمٌ كَبِيرٌ
وَمَنَافِعُ لِلنَّاسِ وَإِثْمُهُمَا أَكْبَرُ مِنْ نَّفْعِهِمَا ۚ الْبَقَرَةُ ٢

They will question you concerning wine and gambling. Say: "In both there is great sin, and some profit for men. But the sin in them is greater than the profit."

Alcohol: The Final Enemy of Civilization

One of the most famous hygiene experts in the world, Prof.Hirsch, states in his book on the subject that: "The Prohibition, which the civilized United States could not enforce for 15 years, has been successfully sustained by Islam for 14 centuries, thus saving civilization and humanity from destruction at an early stage."

There are three distinct verses in the Koran prohibiting alcoholic drinks, the first of which is the present verse we shall interpret. The second is Verse 43 of Chapter 4 and the third, Verses 90-91 in Chapter 5. Some commentators are of the opinion that the prohibition against liquor was introduced gradually, while others maintain that these three verses do not differ in their basic sense and that the differences in expression result from special inner meanings.

I, too, share the latter view, for sanction and toleration for spirits is to be found neither in these three verses, nor in any other verse in the Koran. All three verses have, in their different ways, banned alcohol; or rather, the risks of alcohol have been explained separately. The present verse calls to mind especially the material harm of liquor, and since we are presenting a series of explanations in connection with the scientific aspects of the verses, we shall interpret this verse in particular.

In order to comprehend the deleterious effects of alcohol on human health, it is first necessary to learn something of its chemical properties.

We know from chemistry that alcohol is a powerful solvent; a solvent especially of fats. In nutritive terms, it is a product not of synthesis but of breakdown, being produced as a chemical by-product of a basic food, sugar, during its digestion by bacteria. For these reasons, alcohol is considered as a harmful chemical by the human body and is immediately broken down ('detoxified') by the liver. Alcohol, therefore, has definitely no nutritive value, contrary to the claims of those enamored of it. When ingested, it is metabolized uncontrollably in opposition to all other foodstuffs. This is the apparent benefit cited in the verse.

We can now come to the influence of alcohol in the human body.

a) The Influence of Alcohol on the Digestive System

The damaging effects of alcohol begin with the mouth. Normally, there is a special living environment (flora) in our mouths. This environment makes it extremely difficult for dangerous bacteria to survive. But since alcohol causes the deterioration of this flora, it results in the infection and chronic inflammation of the gums. The teeth of those in the habit of taking alcohol therefore decay rapidly.

After the mouth come the throat and the esophagus. These two organs are the continuation of one another: They serve very difficult tasks and possess a very sensitive inner lining (the mucous membrane). It is this lining that alcohol intimidates, irritating and wakening the insides of

these **two** organs. Alcohol is clearly implicated in cancers of these organs. In fact, institutions fighting against cancer have been taking serious measures against alcohol since 1980.

It is known that alcohol gives rise to chronic gastritis in the stomach, since it dissolves the lipids which form a protective coating against hydrochloric acid and prevent the stomach from digesting itself. Although it has not been established as definitely as for cancers of the throat and the esophagus, the view is prevalent that alcohol also aids in producing stomach cancers.

Alcohol inflicts its most damaging effects on the duodenum, the seat of very subtle chemical processes. It disturbs its secretory order and distorts its chemical sensitivity. In ruining this critical organ of the digestive tract, alcohol also overwhelms the secretion of bile. The duodenum and gall bladder of all alcoholics are ill, or at least in a dysfunctional state. This condition tweaks the nose of every alcoholic in the form of vehement gas.

Since this disturbance also influences the intestines, the entire order, the computerized harmony of the digestive system, is thrown out of kilter. Although the healthy body digests what is needful for it by issuing special directives to the digestive system, this control is removed in persistent drinkers, and digestion proceeds uncontrollably. Obesity is the result, for this indiscriminate digestion cannot go further than storing fat in cell interstices. In fact, this fat accumulation sometimes encroaches on the heart's musculature (myocardiac tissue), creating dangerous coronary problems.

The gravest influence of alcohol is that which it exerts on the liver. The liver is a sensitive laboratory which regards

each individual molecule of alcohol as poison. The effects of alcohol on the liver are twofold:

1. The liver cells are occupied solely with the duty of eliminating alcohol, and neglect their other duties.

2. The chemical processes of the liver, each more sensitive than the other, are disrupted by the unchecked interference of alcohol. As a result, the liver has to repeat the same process many times, wearing itself out in this extreme effort.

These effects lead to grave consequences for the liver. The most famous of these is alcohol cyrrhosis, which is living proof that the destruction of the liver has been completed. However, users of alcohol should not find consolation if they don't have cyrrhosis: The more dangerous possibility is that alcohol will disrupt and destroy the functions of the liver one at a time.

The first of these is the production by the liver of substances necessary for the manufacture of blood. Since these cannot be produced by the liver or their production is severely curtailed, all chronic drinkers are anemic. Even though their faces may appear robust because the facial blood vessels are dilated, the bone marrow is devastated.

In addition, insufficient immunological substances (various globulins and especially, immunoglobulins) are produced by the liver in users of alcohol. As a result, such people have lowered resistance to disease.

Alcohol sometimes causes sudden bankruptcy of the liver, in which case the user dies in coma. There is not one event associated with the liver that is not adversely influenced by alcohol, but I do wish to belabor the point further.

b) The Influence of Alcohol on the Circulatory System

The influence of alcohol on the circulatory system is twofold, both indirectly via its effects on the liver and directly through its effects on myocardial tissue. The weakening of the liver, which plays the leading role in the consumption of fatty nutrients in the blood, leads to hardening of the blood vessels (arteriosclerosis) and increased blood pressure (hypertension). On the other hand, the fast burnup of alcohol disturbs the pattern of blood flow which we call the blood flow rate, thus tiring the heart. Furthermore, alcohol causes fat deposits to accumulate in the heart, and seriously disrupts cardiac functions through its adverse influence on the nervous system. It is known that alcoholics die either of cirrhosis or heart failure in the end. For anyone with cardiovascular trouble, imbibing even a drop of alcohol is to have little thought for life or limb.

Again, the view that moderate amounts of whiskey are good for cardiac spasm, as some lovers of liquor are apt to propound and which may on the surface appear as a benefit of alcohol, has no scientific value whatsoever. No such recommendation is to be found in the medical literature, although unfortunately there are many who believe otherwise.

The kidneys, which may be regarded as the termination point of the circulatory system, are also seriously damaged by alcohol. For the kidneys conduct the filtration process at extremely sensitive chemical valences, and alcohol disrupts these delicate processes as well. Paradoxically, drinks with lesser alcohol concentration are more harmful to the kidneys, so that the kidneys of heavy beer drinkers are always impaired.

The lymphatic system — which is one of the most vital systems of the human body — and its blood vessels suffer grave damage at the hands of alcohol. For fatty compounds (lipids) have a very significant place in the structure of this system. The adverse effect of alcohol on lipids wrecks this wonderful protective system.

If God Almighty had not circumscribed human life as mentioned in His verses, we would have seen much more clearly how damaging alcohol can be.

c) The Influence of Alcohol on the Nervous System

Alcohol penetrates the membranes of neurons protected by heavy screens of lipids, and disrupts the electrical communications of this system. This influence manifests itself in two different ways, the first of which is the sudden onset of drunkenness.

The chronic effect, however, is by far the more dangerous. Alcohol damages the nervous system day by day, giving rise to countless illnesses. Furthermore, this chronic effect is maintained even if the initial effects of alcohol are mild or undetectable. For this reason, the claims of some people to the effect that: "I don't get drunk, I'm resistant to alcohol" are a vain consolation.

This effect is extraordinarily grave in youth and especially in childhood. Besides well-known illnesses such as polyneuritis, Delirium Tremens and the Korsakoff Syndrome, alcohol inflicts almost irreparable damage on various centers of the nervous system. Amnesia and hand tremors are the harbingers to this damage.

d) The Genetic Effects of Alcohol

Alcohol, with its fat-dissolving properties, also penetrates reproductive cells and wreaks untold damage. The best-known examples are retarded intelligence and muscular dystrophy in future generations. Many studies and surveys continue to reveal the fact that the mothers and fathers of mentally disordered persons were alcoholics. It has been observed that alcohol damages the ovum, or egg cell, more easily. The outcome is that the children of alcoholic mothers nearly always suffer from hereditary shock. An alcoholic father is the cause of trouble in more than thirty percent of the cases.

e) The Psychosocial Effects of Alcohol

It is well-known how injurious alcohol is to social order and stability. I would like to list the more noteworthy of these effects below.

a) The touchiness caused by alcohol draws the individuals of society into endless fights.

b) Ceaseless divorces that annihilate the family structure and create antisocial children shake the fabric of the entire society.

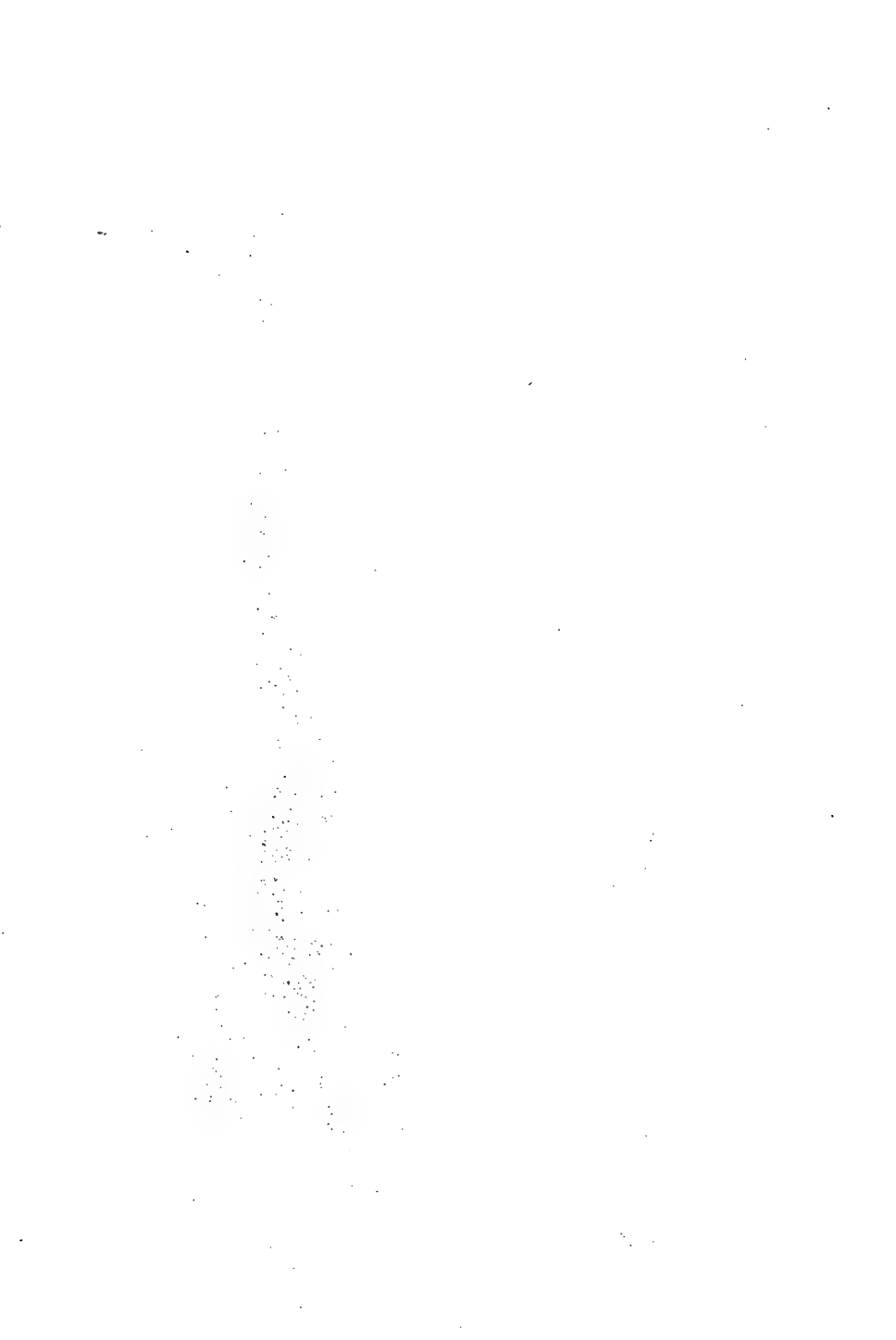
c) The numbness and laziness induced by alcohol erodes the labor force, reducing the productive talents of society.

d) It creates widespread apathy among individuals. As a result, national concerns, social unity, and resistance against social problems vanish altogether.

The above four items have worried Western sociolo-

gists to such an extent that they have informed their respective governments of their fears that national consciousness will evaporate if the use of alcohol becomes widespread.

The Koran has cut off this problem — which no society and no philosopher has been brave enough to tackle, and which gnaws away at society — at its root, thus delivering our society from this curse down through all the centuries.



THE SCIENTIFIC ASPECTS OF TIME

●

يُدِيرُ الْأُمُورَ مِنَ السَّمَاءِ إِلَى الْأَرْضِ ثُمَّ يَرْجِعُ إِلَيْهِ فِي يَوْمٍ
كَانَ مِقْدَارُهُ أَلْفَ سَنَةٍ مِمَّا تَعُدُّونَ ۝ ذَٰلِكَ عِلْمُ الْغَيْبِ

وَالشَّهَادَةِ الْعَزِيزِ الرَّحِيمِ ۝ السجدة ٢٢

He rules all affairs from the heavens to the earth.
Then they all go back up to Him in one day, whose
measure is a thousand years by your reckoning.
He is the Knower of the Unseen and the Visible,
the All-mighty, the All-compassionate.

CHAPTER 32 (PROSTRATION), VERSES 5-6

The angels and the Spirit ascend to Him in a day,
the measure of which is fifty thousand years.

The Scientific Aspects of Time

These verses, which express the truth of time in the Koranic context and within which many layers of meaning and insight are to be found, have to be interpreted jointly. The verses, extremely difficult to encompass even by modern physics — let alone the physics of 14 centuries ago — in a sense provide their own commentary.

As with all verses related to physics, let us first try to identify the messages delivered by the verses.

1. In Chapter 70, Verse 4, it is declared that the Spirit and angels traverse a distance which would in human terms take 50,000 years in a day. Two important messages are contained here. The first is that their 'day' is equivalent to $50,000 \times 365 = 18,250,000$ of our days. The limiting velocity of physical matter is the speed of light, denoted by c , where $c = 300,000$ kilometers per second. If linear extrapolation is possible, this would imply that the limiting speed for angels and spirits is $cn = 250,000 c$.

The second message is that the concept of time is relative. Until very recently, time was simply a matter of consulting the watch. The verse, however, indicates that time can possess varying flexibility for different entities.

2. Chapter 32, Verses 5 and 6, which are very difficult to interpret, contain altogether different messages.

a) The majority of commentators have understood this verse in the sense that the creation and return of the Divine Will occurs in one day — a day which, however, is equal to a thousand of our years. Some commentators take 'thousand' to mean 'thousands of'. The concept involved here is quite clearly the very slow passage of time on earth. In both these verses and Verse 4 of Chapter 70, it is explicitly emphasized that the passage of time on our planet is very sluggish.

b) Verse 6 provides an explanation for this retarded flow time: *"God is the knower of the unseen and the visible."*

Hence, the dilatory flow of time is closely related to the phenomenon of visibility and invisibility. I shall presently explain how this insight represents a very recent law of physics.

c) From the preceding verse of the same chapter, it can be seen that the 'days' pertaining to the creation of the world are not the ordinary calendar days we know of. In all Holy Books, the statement occurs that the world was created in 6 days. With the present verse, the Koran expresses the fact that the use of the word 'day' here is different from our ordinary concept of a day.

3. When the verses in the two chapters are considered together, we can derive the following scientific messages:

a) Spirit and angels are invisible, for their speeds are much higher than those of physical matter.

b) The flow of time is different at various locations in the universe.

c) When God wills the creation of something, it is reflected and returns back to Him.

d) The visibility (observability) of objects and beings is a matter of speed. On earth, where a retarded flow rate of time is observed, the border of visibility is the limiting velocity of light (32:6).

Now, after all these preliminaries, what does modern physics have to say about time, speed and physical appearance?

Einstein and Lorentz have determined the speed limit of matter as 300.000 kilometers per second in a fundamental physical law. This fact has led some materialists to the habits of defining boundaries for the universe. Dirac and Heisenberg, however, checked this game of boundary definition.

The reason for the limitation on the speed of matter arose from the fact that the mass of an object tends to grow infinitely large as the object approaches the speed of light. However, Prof. Gerald Feinberg, professor of physics at Columbia University, has theorized that this speed limit peculiar to matter in the universe can, in fact, be exceeded. Research in astrophysics has yielded examples of matter whose energy is exhausted and energies whose matter has been exhausted. Feinberg demonstrated theoretically by the use of mathematical equations that there can be rays not subject to our concept of mass. These rays are called 'tachyons'. Because the speed of these rays exceeds the limit, cannot be classified as ordinary matter. If they lose speed, they would have to gain mass, revert to material form, and become visible or observable. Similarly, particles that move faster than light in material media excite the emission of photons, a phenomenon which is named 'Cerenkov radiation' in honor of its discoverer.

Denoting the speed of light by c , the velocity of these rays can be, for example, $2c$ or $10c$, in which case time would be dilated for them by comparable factors. As a matter of fact, investigation of cosmic rays has shown that the flow of time is different — either slower or faster — in various regions of the universe.

Tachyons have two modes of existence. The first is pointlike, where the tachyon emerges into physical space at various points strung along a line. In the other mode, it would appear to be spread out across the entire complex plane. This physical approach is not dissimilar to the concept of 'angels' in the Koran. The invisibility of angels must be due to their infinite velocity, as, in fact, the verses appear to express quite clearly.

Let us now review the messages of the verses in the light of these most recent concepts of physics, and behold with admiration the scientific miracles of the Koran.

1. What Do The Verses Say?

Angels cannot be seen. Their velocity is (possibly) given in terms of material speeds as $c_n = 18,250,000c$. Time, which flows slowly and sluggishly in our physical world, has no meaning for them.

What Does Science Say?

Entities with velocities greater than 300,000 km/sec cannot be observed. The flow rate of ordinary time has no meaning for them, and this rate may itself differ throughout the universe.

This scientific acknowledgment also confirms that the movements of angels and the Spirit are not subject to spatial limitations.

2. What Do The Verses Say?

"The Divine Will is reflected through the unbelievable speeds of unseen powers, and returns in the interval of a day that to you would appear as a thousand, or thousands of, years."

What Does Science Say?

Tachyon beams with mind-boggling velocities represent invisible forces. They become manifest in the physical realm, and then return to whence they came.

The most recent discoveries and conjectures of physics have only just had the honor of catching up with the verses of the Koran, which enlightened the worlds 14 centuries ago.

These verses in Chapter 32 and 70 are so full of insights that they shelter many other unfathomable secrets of Creation. More importantly, these two verses make the necessity to believe in unseen angels an inevitability of physics.

The concept of 'angels' which we accept at the beginning of our creed ('I believe...'), has been abused for years by atheists. Atheists in the East and West have scoffed at the belief in angels. But today, science has begun to understand the possibility of such entities, declared as a miracle in the Koran, by means of the concept of velocity in physics. The unfolding of this comprehension in our time is itself a separate miracle of the Koran.

THE CREATION OF THE UNIVERSE

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تَكَادُ السَّمَوَاتُ يَنْقَطِرْنَ مِنْ فَوْقِهِنَّ وَالْمَلَائِكَةُ
يُسَبِّحُونَ بِحَمْدِ رَبِّهِمْ وَيَسْتَغْفِرُونَ لِمَنْ فِي
الْأَرْضِ ۚ أَلَا إِنَّ اللَّهَ هُوَ الْغَفُورُ الرَّحِيمُ ۝

The heavens are almost rent asunder above them.
And the angels proclaim the praise of their Lord,
and wish forgiveness for those on earth. Surely
God is the All-forgiving, the All compassionate

CHAPTER 42 (COUNSEL), VERSE 5.

Do not unbelievers see that the heavens and the
earth were ratq (united) before We fatq (rent them
asunder), and of water fashioned every living
thing? Shall they still not believe?

The Creation of the Universe

Since these verses are mutually explanatory, I shall interpret them in a joint fashion. They shed light on many problems about the universe which physics itself has been unable to resolve. In commenting on these verses, we shall find ourselves involved in the most extraordinary and dazzling of Koranic revelations. These I bequeath to astrophysicists, for we shall find that some of the implications of these verses, spanning a gulf of 14 centuries, land not in our present day but actually in our future: They deal with topics which are only just being encroached by astrophysics, and will probably become fully comprehensible only within a couple of decades.

Careful inspection of the verses yields the following main themes:

1. All the levels of heavens and the earth were united. God created the heavens and the earth by sinderling them from each other in stratified form.

2. The heavens (the successive spatial strata of the universe) have not only been created by a tremendous tension or potential difference, but it is the same tension that still maintains them in existence. This tension is imposed by Divine Omnipotence on the spacetime continuum.

The other facts related to the verses will be dealt with below. We shall see that the "rending asunder" by which the universe is created in fact implies not one but several different kinds of tensions.

A) After decades of deliberation, physicists and astrophysicists have decided that the 'big bang' theory, developed by Martin Ryle and Allan R. Sandage, best accounts for the creation of the universe. In this view, the universe exploded into existence from an incredibly dense and hot point called a 'singularity'. In the first instants of creation, the singularity was so hot that it is meaningless to speculate about it. By the first hundredth of a second, the singularity had expanded into a primordial fireball, and its temperature was one hundred billion degrees Kelvin. Protons and neutrons had not yet congealed out of this 'primordial soup', and neither had the four known physical interactions. Matter and energy were constantly being converted into each other in this soup, and the four interactions were united as one highly symmetrical interaction.

As this extremely hot and dense fireball expanded, it began to cool, and the perfect symmetry began to break. First the gravitational force or interaction separated out, and this was followed by the strong, weak and electromagnetic interactions, in that order. The "rending asunder" of the heavens and the earth thus began with the process of symmetry breaking where the initial symmetrical interaction separated into the spectrum of the four known interactions of physics. In other words, not only was the initial singularity torn apart to form the universe, but its laws were also differentiated in a similar manner.

God, then, in His infinite magnificence, distended the universe from a single point. The tension by which this was effected is the subject of 42:5. God set apart the heavens

and the earth by this tension, creating both the observable universe and its laws in this way.

Another significant point in this connection relates to the initial union of the heavens and the earth as described in 21:30. Not only did Einstein, in his Theory of Relativity, demonstrate that matter and energy were one and the same thing, matter being condensed energy and energy, 'liberated' matter: He was also able to show that space and time are inseparable, the two being joined into a single space-time continuum. Furthermore, his findings revealed that gravity, and therefore mass, was simply the curvature of this spacetime continuum. In other words, matter was formed by 'bending' the spacetime continuum, a process involving a tension which almost literally split the heavens and the earth asunder.

B) Once the universe was created, it continued to exist through the maintenance of the same tension that created it. One way in which this tension manifested itself was through attraction and repulsion. In electricity, it is a well-known fact that opposite charges attract and like charges repel each other, a fact to which the atom, and therefore all matter, owes its existence. Moreover, the balancing of the gravitational force by the centrifugal force describes a locus which enables planetary systems to exist. Thus, the survival of everything from atoms to planetary systems is assured through the existence of such tensions.

Now in the Opening Chapter, after God declares the ordering of the worlds physically and mathematically through His attribute of Lordship, the immediately succeeding expression is His "Compassionate" attribute. "The Lord looking down in pity" has compassion for all His creatures and therefore on all worlds, and included in this attri-

bute of Compassion is the concept of tender and merciful protection.

Gravitation, in which all things attract each other, is an expression and symbol of divine love. On the other hand, the rotational motion of objects — whether they be planets circling a sun or electrons orbiting around a nucleus — prevents the concentration and annihilation of all matter in the universe by gravitation. And this rotational motion is none other than the way in which these entities glorify God, offer praise and thanks to Him, and iterate His name. Hence, the projection of Love in the material universe is the gravitational force, whereas the secrets of Compassion and its counterpart, Thanksgiving, are reflected in all rotational motions in the microcosmos and macrocosmos.

C) As hinted in connection with Relativity above, empty space is considered not as a vacuum but as a plenum in modern physics. Due to Heisenberg's Principle of Uncertainty, the vacuum itself fluctuates in time. Within the constraints of the uncertainty imposed by Heisenberg's principle, the laws of conservation of matter and energy can be transcended, and quanta can be created out of nothing, to be annihilated an instant later before conservation can be violated. Such a particle that enters reality and then instantaneously returns to nothingness is called a 'virtual particle.' If sufficient energy could be imparted to these 'ghost' particles, on the other hand, they could be actualized. Such creation of real from virtual quanta has actually been observed in the laboratory.

Similar to Dirac's earlier notion of a vacuum 'sea' where an antiparticle is regarded as the 'hole' left behind by a particle — a clear case of *fatq* or rending from its location — the vacuum in the present view, although uniform and featureless from afar, when viewed microscopically is a

seething, churning ocean of particles and antiparticles being produced as pairs and annihilated every instant. This incredible notion was physically vindicated when Willis Lamb discovered what has since become known as the 'Lamb shift' in physics.

Lamb was able to measure small shifts in the spectre of hydrogen atoms. It turned out that these shifts were being caused by the creation and annihilation of virtual particle pairs in the empty space between the nucleus and the electron. The electric field that binds the electron in orbit can sometimes create an electron-positron pair out of the vacuum ocean, and the pair then immediately annihilates. This effect, called vacuum polarization lasts long enough to create a shift in the orbital energy of the electron. Thus, it is the tension of the electric field that pulls a pair of virtual particles into existence in this case.

Turning to the exotic black holes of astrophysics, the English physicist Stephen Hawking has discovered that a black hole is unstable and causes the indirect emission of radiation. The intense gravitational field near the 'event horizon' of the black hole causes pair production from virtual particles, and the annihilation of these results in the emission of electromagnetic radiation which is expected to be observable. In the present case, then, it is the intense tension of the gravitational field that causes the split of the vacuum into matter and energy. In a recent book titled *God and the New Physics*, physicist Paul Davies of the University of Newcastle has indicated that the decay of the free vacuum, or the creation of being out of nothingness, could not occur without the mediation of God.

In the light of the above facts, then, I want to suggest that just as with the electric and gravitational fields, an intense magnetic field tension will also cause particles to

pop into existence. It is this field, present at all points in the universe, which orders, structures, stratifies and maintains the latter. As we shall see in the next topic 21 — what I have in mind here is especially the segregation of heavenly strata -- the seven heavens are supported and held in existence by this field tension.

D) Black holes are the points where the tensions implied in 42:5 and 21:30 reach their ultimate values. The gravitational field is concentrated at such locations to such a density that escape from them becomes impossible. On a less dangerous but more aesthetic level, the protons and electrons driven by the magnetic storms occurring on the sun (the 'solar wind'), upon reaching earth, spiral down to the Poles in a phenomenon of great beauty called the 'Aurora Borealis'. Thus, both the origin and the culmination of this phenomenon reside in the tension of the magnetic field.

How, as 21:30 asks, can one still continue in unbelief when faced with such compelling evidence? I have mentioned earlier that each of the 'H-M' chapters articulates a different law of Genesis, and Chapter 42, Verse 5 gives expression to this tension. As we shall see in the topic on seven heavens, the same tensions that "split the heavens and the earth asunder" also serve to balance, temper and maintain the various heavens with respect to each other. Thus, the verse that announces *fatq* (rending) also points to differentiation.

Atheists have long viewed Chaos as the origination of Cosmos. What they fail to understand is that without an Organizer, Chaos can never be transformed into Cosmos; it must always and forever remain Chaos. Moreover, if the Supreme Organizer were not present to sustain Cosmos each instant at every point, the latter would degenerate into

Chaos within billionths of a second. The tension imposed by God, then, serves to manifest an incredible order at every point of the universe, and the selfsame tension of 42:5 is used by God to hold power over every point in space. It is the splendor of this order and power manifest throughout the universe which is implied in Chapter 67 (The Kingdom), Verse 4: *"Look, then look again; each time your gaze will return to you, bewildered and dazed."*

How, then, in the query of 21:30, *"can they still not believe?"* God is clearly declaring that unbelief is incompatible with even a little knowledge, and can be the result only of total ignorance. The fact is that in our day, the discoveries of physics and astrophysics have obviated all possibilities of denying the Koran and the existence of God: the atheist has no sanction to enter the City of Science.

TOPIC 21.

THE SEVENFOLD HEAVENS



اللَّهُ الَّذِي خَلَقَ سَبْعَ سَمَوَاتٍ وَمِنَ الْأَرْضِ

الطَّلَاق ١٥

مِثْلَهُنَّ ٥

It is God who created the seven heavens, and of the
earth a similar number.

The Sevenfold Heavens

In many of its verses, our Glorious Book speaks of seven heavens in the universe. Science has been dealing with the cosmos for more than 200 years, yet it has been unable to obtain any information on this subject. Only in the last 25 years have extremely interesting discoveries been made in astrophysics and the miracle of the Koran been vindicated. What science has discovered is, of course, as yet only a drop in the ocean; but at least it is beginning to realize its mistakes of the last two centuries.

Let us first take a collective look at the verses in the Koran concerned with the seven heavens, and then review both their scientific explanation and the synthesis they afford.

a) The Kingdom, 67:3.

"It is He who created the seven heavens, one above another (tibaqan)." (Please refer to the explanatory section.)

b) The Cow, 2:29.

"...He lifted Himself to heaven, and levelled them seven heavens with order and perfection; and He has perfect knowledge of all things."

c) The Night Journey, 17:44.

"The seven heavens and the earth, and all beings therein declare His glory. There is nothing that does not proclaim His praise and thank Him, yet you do not understand how they declare His glory. He is All-Clement, All-Forgiving."

d) Noah, 71:15.

"Have you not regarded how God created the seven heavens, one above another (in harmony)?"

e) The Great News, 78:12.

"We have built above you seven firm heavens (firmaments)."

f) The Believers, 23:17.

"We have created above you seven paths, and We are not heedless of creation."

Let us now review the intimations of modern astrophysics regarding space and the cosmos.

Until comparatively recent decades, scientists assumed that there were 2 million stars in the universe. But this view has dissolved in the face of astrophysical discoveries. Modern scientists describe cosmic regions as follows.

The cosmos represents diversified concentric magnetic layers. The central band consists of galaxies and clusters of galaxies composed of vast numbers of stars. Outside this, there is a second field with different magnetic properties containing quasars (the 'hatcheries' of star 'seeds'), and surrounding this, a third magnetic band encompassing the nethermost regions of the universe.

The innermost circle, and particularly our own solar system with its family of planets, is the easiest region to observe. The inner structure of such a system consists of three separate magnetic fields.

First of all, each planet possesses a magnetic field and — if present — an atmosphere. This refers to the vicinity of the planet. Next, the planets form a second magnetic field in combination with their solar system. Further, each solar system within a galaxy — and there are at least a hundred billion stars, or suns, in our Milky Way galaxy alone — constitutes a separate magnetic region. And on a higher level, galaxies close to each other are subject to another magnetic field within clusters of galaxies.

Hence, when you look at the sky or into space from the earth or any other planet, you are surrounded by seven magnetic fields receding into the infinity of space. Looking at the cosmos from the earth, these are:

1. The spatial field we constitute together with the solar system (the 'First Heaven').

2. The spatial field of our galaxy (the 'Second Heaven'). (The magnetic field sculpting the core of the Milky Way has only just been discovered).

3. The spatial field of our 'Local Cluster' of galaxies (the 'Third Heaven').

4. The central magnetic field of the universe represented by the collectivity of galaxy clusters (the 'Fourth Heaven').

5. The cosmic band represented by quasars (the 'Fifth Heaven').

6. The field of the expanding universe represented by

the receding galaxies (the 'Sixth Heaven').

7. The outermost field representing the limitless infinities of the universe (the 'Seventh Heaven').

Here, then, are the sevenfold heavens declared by the Koran 14 centuries ago.

The miracle that really blows the mind is the light shed by other verses in the above facts already established by science. We have already mentioned some of these. To recapitulate,

a) The Counsel, 42:5: The different heavens are under a tremendous strain or tension due to intense magnetic fields. (topic 20)

b) Scattering Winds, 51:47: *"We expand the heaven."* (This verse will be interpreted in Topic 10.)

c) The Prophets, 21:104: *"We created the universe like the pages of a book, which we fold."* (See Topic 4.)

d) The Prophets, 21:30: *"We rent asunder the heavens and the earth, which were united."*

The separate interpretations of these verses will be presented later. For the time being, the important thing is that the Koran does not simply mention the seven heavens and leave it at that, but broaches the most advanced physical explanations in accordance with the concepts of modern astrophysics.

In order to reach a better understanding of the concept of seven heavens, I would like to summarize some further information related to astrophysics.

The layers of heavens listed above involve unimaginable distances. The first heavenly layer is approximately

6, 5 trillion kilometers in thickness. The second layer, or the diameter of our galaxy, is 130 thousand light years. The third heaven, or that of our Local Cluster, spans 2 million light years. The fourth heaven, which is the collective field of the clusters of galaxies forming the central core of the universe, is 100 million light years in diameter. The fifth heaven is at a distance of 1 billion light years and the sixth, at 20 billion light years or about 193×10^{21} km. Physical transport from one heaven to another is impossible, both because of the speeds involved and because the magnetic potentials cannot be transcended. In order to pass into these heavens, it is necessary to exceed the speed of light; that is to say, to pass beyond the world of matter.

As we have mentioned in the second topic the Glorious Koran has revealed this subtle secret of distances as well. According to some scientists, black holes at the centers of galaxies (families or collections of stars) facilitate 'jumps' from one galaxy to another. A black hole is thought to exist in the galaxy M 87. This insight, too, has been mentioned in the Event chapter in the Koran. The Koran, therefore, in describing the seven heavens, has also presented all the facts related to astrophysics.

Let us now examine the principles of the sevenfold heavens in the light of the verses given at the beginning of this section.

It can be seen that the harmonious order and physical firmness of the sevenfold heavens are the first point emphasized in the verses. The second important point is fact all creatures in these seven heavens praise God, giving

thanks to him. The third is that God Almighty has approached the heavens in his capacity as Creator and with Omnipotent Will, that is, has turned to them and shaped them with His power. This fact is an expression of Divine Omnipotence, which initiated the magnetic potential of the heavens.

As for Verse 17 of The Believers (Chapter 23), the definition of sevenfold heavens, i.e. seven paths, occurs there. All commentators are agreed that the seven paths stand for seven heavens, and this is indeed the case. The subtlety here is that the seven heavens are defined as seven 'paths' (*tariaq*) so that we might understand seven fields. Hence dimensions, spatial distances and infinite velocities also find expression in the language of the Koran in connection with 'paths'.

I now pass over to the definitions in the verses that will really shed light on the concept of seven heavens.

Sab'a Samawatin Tibaqan

a) The word *tibaqan* means "conforming or agreeing with each other."

This meaning indicates that the seven separate magnetic fields are in harmony with each other. However, this harmony also implies structural variation, for if the seven heavens were of the same structure, there would be no sense in mentioning that they are in conformity.

In physical terms, this conformity implies that these fields with different magnetic potentials take on congruent values at their boundary points. Furthermore, as mentioned earlier, Verse 5 of Chapter 42 (The Counsel) proclaims that the potentials of these heavens are more intense at their

upper boundaries. Approached from this angle, the harmony of spherical or elliptical magnetic lines of force is also indicated. For this verse precludes the possibility that the system of heavens can be disturbed by the extreme forces present at the upper boundary points of the normal magnetic potential, because harmony is present at every point in the seven heavens.

In passing from one heaven to another, this harmony exhibits different characteristics. That is, the seven heavens exhibit harmony among themselves, but passage from one heaven to another is possible only through black holes or similar 'wormholes' in space.

b) *Tibaqan* may be a play on 'layer' (*tanaqa*). The verse would then emphasize the stratified nature of the heavens. Although the ancient commentaries have been disinclined to favor this derivation of *tibaqan* from *tabaqa*, the magnetic strata and fields space were not known in those times.

Whether the word derives from the meaning 'harmony' or layer? the important thing is the congruity, seriality and accord between the magnetic fields of the sky. The sense of the verse indicates that these three properties exist between the seven layers of heavens.

One of the most important of the verses dealing with seven heavens, and one which reveals quite different secrets, is the verse of this topic: *"It is God Who created the seven heavens, and of the earth a similar number. (His) is the Command."*⁽³⁾

Atoms, as everyone knows, are the basic building blocks of the world. To summarize the structure of atoms

(3) The Divorce, 65:12.

briefly, they consist of a nucleus surrounded by a cloud of electrons in motion. The electron cloud represents the energetic nature of a specific electron. The structure of the atom used to be compared to that of the solar system, but it was later discovered that this analogy is rather misleading, for this system resembles the system of seven heavens rather than the solar system. The reason for this is that the electrons cannot select an orbital shell at random, but have to conform to the precisely defined energy levels surrounding the nucleus.

Yes, dear reader: there are seven orbital shells surrounding the atomic nucleus. These are called 'orbitals' (shells) with reference to electrons. An electron can move in one of these orbits, and can exist in one of them only if it has the proper energy. But in that case, this verse is a scientific miracle in its own right, for it informs us that the seven magnetic field values of the macrocosmos are reflected also in the microcosmos.

These layers or miniature shells are exceedingly important in the tiny electronic world of the atom. Transfer from one orbital to another involves tremendous amounts of energy. Not every nucleus can bind electrons in all seven of these shells. It can maintain electrons in these levels only to the extent allowed by its electromagnetic structure, i.e. its number of protons. The upshot is that had we been condemned to live on an atomic nucleus, we would still have seen seven heavens when we raised our heads to the sky, and observed electrons as if they were planets.

Another concept related to the seven heavens is that of infinite dimensions. If the section on dimensions and differentiated spaces in topic 7 earlier, is recalled, it appears that spaces in the cosmos are composed of different

dimensions. Many scientists in the West, whom we might describe as belonging to the Einstein school of thought, also accept that there are more than four dimensions.

Now there are various spaces composed of different dimensions in different heavens. In a sense, the concept of seven heavens also includes the concept of seven separate spatial continua. Since we cannot conceive of dimensions higher than the fourth (i.e. time), we are unable to give an account of these dimensions in our day. In the works of the great thinkers of Islam, different worlds are mentioned among these dimensions, such as the World of Angelic Beings, the World of Spirits, etc.

We must, within the comprehension of rational science, perceive not only the galaxies and systems related to the material universe, but also other dimensions in the concept of sevenfold heavens. Another rigorous approach would be the various energy bands in atoms. As I have remarked in Topic 20 earlier concerning the verses dealing with the Omnipotence that sunder the heavens and the intense tensions they possess, the Koran spreads out the physics of the cosmos before our very eyes.

PRAYER AND MENTAL HEALTH

●

الَّذِينَ يُؤْمِنُونَ بِالْغَيْبِ وَيُقِيمُونَ الصَّلَاةَ وَمِمَّا
رَزَقْنَاهُمْ يُنْفِقُونَ ﴿٥﴾ وَالَّذِينَ
إِلَيْكَ وَمَا أُنْزِلَ مِنْ قَبْلِكَ وَبِالْآخِرَةِ هُمْ يُوقِنُونَ ﴿٦﴾
أُولَئِكَ عَلَى هُدًى مِنْ رَبِّهِمْ وَأُولَئِكَ هُمُ الْمُفْلِحُونَ ﴿٧﴾

Those who believe in the Unseen, perform the Prayer, and spend out of that We have provided them; those who believe what has been sent down to you, and what has been sent down before you, and have faith in the Hereafter: Those are upon true guidance from their Lord, and those are the ones who will be saved.

Prayer and Mental Health

As everyone knows, the basic form of worship in our religion is Prayer (*salat, namadh*).

Prayer is the thanks and supplication of the servant to his God. It is man's journey on the sacred path that leads to God. Prayer is the grace of viewing the infinite world within the secret of the Opening Chapter.

For these reasons, no science has the power to unravel or outline the mysteries of Prayer. In particular, to view Prayer merely as a physical exercise is as ridiculous as believing that there is nothing more to the universe than the air we breathe. In the interpretation of verses in this scientific series, we shall open a window only on the most exoteric aspects of Prayer, affirming its miraculous effects of Prayer, affirming its miraculous effects on mental health. My readers should not, however, be misled into believing that the benefits of Prayer are confined to the contents of these few meager pages. The beneficial effect on psychological health is just one of the thousand-and-one mysteries of Prayer.

"Read the book that has been revealed to you, and perform the Prayer. Prayer restrains from indecent and unjust deeds. Iteration of God's name is without doubt the

greatest thing. God knows the deeds that you do.'⁽⁴⁾

It is common knowledge that there are many verses in the Koran dealing with Prayer. Of these, we have chosen the above verse since we wish to concentrate on psychic health. First, however, I would like to mention an important point before passing to the interpretation of the verses. The branch of science that passes under the name of 'psychology' (the "science of the psyche") in the Western scientific community is not, in fact, concerned with the soul. From the standpoint of Islamic sciences this field, in investigating our behavior, is actually attempting a description of the 'Self' (*nafs*).

What we qualify as mental health is slightly different. Although they also rely heavily on the Self, the branches of science among Western sciences dealing with behavioral disorders are psychiatry and mental hygiene as its subdiscipline, which take the response of our total character for their subject.

Our entire personality structure is the end product of the combination of our body, soul and heart, with the Self playing a predominant role. I shall pass over to the explanations without dwelling further on this subject, which is actually very important and should be reconsidered in depth by Islamic scientists. What we have to bear in mind at present is the fact that by mental health, we mean not the traditional concept of the soul, but our self-oriented ('selfish') personality.

The message delivered by the two verses as concerns Prayer are summarized in the following points.

(4) The Spider, 29:45.

1. Whoever performs the Prayer receives deliverance.

2. Whoever performs the Prayer is protected and removed from evils, excess and immorality.

Let us now take a look at the general appearance of human beings from the standpoint of psychic health.

All human beings in our age have fallen into the cogwheels of a mechanical life under the influence of atheistic and materialistic philosophies, and many of them have lost their mental composure. As a result, unhappiness has become the rule among human beings. The result is that all people have fallen into the following impasses and experience suffering.

a) They are in the grip of psychosomatic illnesses, which are the reflections of mental distress on the reflections of mental distress on the body. The damage inflicted by worries on the endocrine system give rise to stomach ulcers, cardiovascular illnesses, and various digestive disorders. The role of stress and mental distress is painfully evident even in the case of cancer, considered to be the sickness of our age. The majority of human beings, therefore, suffer at the mercy of material ailments due solely to mental disturbances.

b) A fifth of mankind has been forced into alcoholism and narcotics by mental disorders.

c) Psychic distress has become the rule in developed countries. Nowadays, everyone carries 'sunshine pills' in their pockets which are supposed to be the less harmful among sedative poisons.

d) Again, statistics compiled in the West indicate that the younger generations — a full thirty percent of them —

are on the brink of mental instability, and mental illness is easily precipitated.

Even more heartbreaking is the plight of Eastern societies living under oppression and cruelty, and of the underdeveloped countries afflicted by famine. As is stated in the Chapter of Time, *"Man is in absolute loss."*

In the face of all this, both the ruling: *"They have received deliverance"* in Verse 5 of Chapter 2 (The Cow), and the call to salvation in the Prayer call constitute an incredible miracle of the Koran. For the Koran declares: *"Human beings, you are in loss and miserable. If you want salvation, happiness and spiritual vigor, come to Prayer."*

Let us now investigate what kind of salvation Prayer bestows on us. We stand in God's Presence, promise God that we shall leave all troubles and worldly concerns behind, and pronounce the Beginning Call. We dismiss the worries of the world at least for ten minutes. We then recite 'the Praise'; that is to say, we praise God's greatness, and come to the Opening Chapter, or 'Opening' for short.

The Opening is a wonderful balm that razes the anxieties and errors of man's inner world, and creates a new world in its place. Due to this, the Opening is also called the Chapter of Recovery. No matter how hopeless the situation of a man, the Opening is capable of rescuing him from his impasse and placing him on the Straight Path: The path leading to truth and beauty.

Since the Opening is the basis of Prayer, let us briefly describe the Opening.

1. *Praise belongs to God, the Lord of the Worlds;*
2. *He is the All-Compassionate, the All-Merciful;*

3. *He is Master of the Judgment Day.*
4. *You only we worship; You only do we ask for help.*
5. *Guide us to Your Straight Path,*
6. *The path of those on whom You show favor,*
7. *Not of those who incur Your wrath, nor of those who go astray.*

Can any illness of the mind and heart survive in a person who recites this marvellous prescription in the Divine Presence forty times a day, in the forty bendings ('bends') of Prayer?

With each of its verses, the Opening imparts a magic truth to the human psyche, and erases all errors from our constitution. A brief review will convince us that there is no exaggeration in this claim:

1. Praise belongs to God, the Lord of the Worlds.

O Mankind, praise and thank God, who created the infinite order of the worlds, and keeps it under control every instant (the attribute of Lordship). Do not be afraid of or deterred by any influence at all, for God, whom you praise, is —

2. All-Compassionate and All-Merciful.

That is, He has not only given life to all creatures through His pity and love ('Compassion'), but the thanksgiving, faithful human being becomes the recipient of His special mercy, love and forgiveness ('Mercy'). And don't forget that the whole world is based on love and mercy: Indeed, the planets give thanks by revolving in their orbits, and so do the atom and its nucleus, which are enabled to

exist through love (attraction). He who loses his love and praise is destroyed. The verse proclaims and declares that there is no life as long as power is not drawn from the sources (attributes) of 'Compassion' and 'Mercy.'

3. He is Master of the Resurrection, of the Judgment Day.

Do not forget that you will be called to account. And because of this,

4. You only we worship, and You only do we pray for help.

Now this verse will save a person from all the calamities that might befall him in this worldly life. He who is not the slave of money, power or profit will assuredly be freed of all errors and delivered from sundry blind alleys. He who prays only to God for help will not be grieved if something goes wrong; he will not torment himself. When faced with difficulty, he will strive with all his power, and leave the outcome to God.

Whoever reads the fourth verse of the Opening is freed of all stress and distress. Whoever recites this verse forty times a day, and especially whoever continues this rhythm for a lifetime — that is, performs the Prayer unflinchingly — becomes one of those who attain liberation: He is freed of all excesses and evils.

The passions for which people excuse themselves on the pretext of economic want are actually an error arising from slavery to money.

5-7. "Dearest Lord, we cannot find the true and the right (the Right Path) by ourselves; please help us. Bestow Your grace upon us by showing us the truth. Please do not

leave us in troubles and distress like those who go astray."

To be purified of anxieties and cares forty times a day during the five appointed hours...

The esoterica of the bending and prostration in Prayer lied beyond the scope of our subject.

When regarding Prayer collectively, we should also consider the continuous discipline it brings to every aspect of our lives, the necessity of avoiding ethical errors and the like, and the habit of the Washup which always provides material and spiritual vigor.

You will behold how salvation and happiness permanently enters our lives.

Prayer is a divine seal stamped on the inner world and meaning (soul) of man, and we observe its first effect immediately in mental serenity. One would have to be blind not to experience salvation and happiness at this point. If we cannot observe this effect in some people, it is because their is merely an exhibition devoid of sincerity.

It is certain that Prayer provides deliverance to the physical structure of man. This is in fact representative, since it occurs in every respect, as God has declared that *"they have found salvation"* (liberation, security, healing, happiness). Just as all the joints of a prayer achieves health, his mental health and spirit (meaning) are safeguarded in a similar way. Today, even materialists acknowledge that there can be no prescription other than Prayer for the relief of joints. Unfortunately they cannot draw aside the veil, see the salvation provided by this divine grace bestowed 14 centuries ago on our spiritual world, and achieve faith. For faith is a gift, a matter of divine guidance; and its center lies not in the mind, but in the heart.

TOPIC 23.

MYSTERIES OF THE CAMEL

●

أَفَلَا يَنْظُرُونَ إِلَى الْإِبِلِ كَيْفَ خُلِقَتْ ^{قَفَّةٌ} ١٢
الغاشية..

Do they not consider the camel, how it was created?

Mysteries of the Camel

In its first sixteen verses, the 'Overwhelming Event' Chapter declares the abasement of unbelievers at Resurrection and the favors to be bestowed on the Faithful. Verses 17 through 20 give examples of the divine order and the marvels of God's creativity. The first of these is the creation of the camel. This implies that some secrets of divine wisdom are present even in the genesis of a camel. Furthermore, these mysteries constitute an open reply to atheists, informing how they will be confronted with their errors on Judgment Day.

What, then, are these secrets in the creation of a camel? And why has the camel been chosen as an example?

1. The camel has a characteristic that refutes the theory of evolution at its very basis:

a) The camel is a large, herbivorous animal. As such, had the camel been a representative of the chain of mammals as the evolutionists believe, it should have lived in forests. And if it had fallen into the desert by mistake, it should have vanished from the surface of the earth along with the dinosaurs, mammoths and mastodons. For according to the evolutionists, the disappearance of forests where mammoths lived caused the extinction of the latter.

The existence of the camel contradicts the principle of natural selection for large herbivorous animals. Besides, the extinction of dinosaurs and mammoths has to do only with the oxygen balance of the earth, a point which I shall deal with while interpreting another verse (Topic 32)

b) According to evolutionists, the defenseless are eliminated in the struggle for survival. But the camel has no natural defences whatsoever, and yet it has coexisted with lions in the desert for thousands of years.

c) Although the digestive system of the camel possesses the ability to convert the cellulose of thorns into carbohydrates, it does not differ in structure from those of other herbivores. If only for this reason, the camel should have migrated to forests long ago.

d) The carnivores living in the desert have a biological function: To survive on other animals that end in the same place. But the camel has no such *raison d'être*. The only food it can eat in the desert is thorns. The excuse of 'biological function' advanced by evolutionists to explain the spread of organisms over the globe is not applicable to the camel.

The camel is an agent entrusted with sevice to humanity. This is why it lives in the desert, and in every moment of its existence it turns its large, limpid eyes on the evolutionists in mockery.

2. The camel has very interesting biological properties.

a) All organisms exchange vitamins with each other, animals in particular obtaining vitamins from plants. The camel, on the other hand, produces its own vitamins.

b) Water molecules remain for 7-14 days in the bodies

of all animals, and if they cannot be replaced by fresh molecules the organism is condemned to death. Experiments with radioactive tritium have revealed this fact. In the camel, however, the water molecule preserves its inscrutable ionic property for 50 days on end.

c) It has a memory storage system unlike that of any other animal: It never forgets what it sees, producing, as it were, a map of the path life; God has given it this trait just so that it can serve man better.

d) In spite of its large size, it is extraordinarily sensitive and submissive. This peculiarity of creation is at cross-purposes with its desert life. A creature living in the desert should be harsh and devoid of all sentiment, like buzzards and lions. The camel, created by God for service to human beings, flaunts this property in the faces of atheists and evolutionists down through the ages.

When God, therefore, begins to list the marvels of His creation in the 'Overwhelming Event' Chapter, His prelude: *"Do they not consider the camel, how it was created?"* is almost a warning to the atheists and evolutionists of our day. He declares, in effect: "Look at the camel and how it has been created. I create any organism with any purpose I wish. Even though that animal longs for verdant fields, it has contentedly settled for a life in the desert in acceptance of its servanthood."

Another reason for bringing in the creation of the camel as an example is that its long journey resembles the story of its life.

Among the many virtues of the camel, there are two important moral qualities:

a. Its patience: Among all animals, the quality of patience can be found only in the camel. The reason why the sacred verse gives the camel as an example right after the section on Paradise is in order to emphasize the importance of the secret of patience.

b. The second quality of the camel is that it has a musical ear: It delights in beautiful sounds coming from the environment, or in the voice of a human being.

God has granted these qualities transcending its animal creation — such as patience, endurance, memory and musical aesthetics — to the camel for its loyalty in servanthood and its service to humanity.

Islam considers that all creatures, and especially living beings, have been created in the service of man. There is a strange trend or current in biology that is difficult to understand. It is as if biological events tend toward a certain aim, from atoms to molecules and from thence to DNA, the building block of life. Materialistic biologists have been unable to account for this phenomenon.

The organisms in our world practice such subtle artwork on molecules that the woven tapestry represents a purpose running from atom to man. Since this basic biological insight lies behind the purpose of the camel's service to man, I would like to go into this subject a bit further.

Take an apple. The Vitamin C it contains is exactly the amount required daily by man. In order to preserve it, the apple balances the fruit acids in its composition with carbonate ions. Furthermore, iron with a valence of 2, which is very necessary for man, is again present in a single apple in the daily required amount. All these substances present in the apple's constitution have nothing to do with either the apple or its species. Besides, even if the apple did not

have this composition, **we would still have raised it since it contains fructose.**

We find the same situation in connection with honey (shown in topic 17) . Again, it is known that many animals providing milk produce 3 to 30 times the amount required by their offspring. What is more interesting, however, is how microbes almost vie with each other in the service of man. The billions of bacteria in our intestines prepare various enzymes and vitamins for our use. Our most vital foods, such as yoghurt, cheese and bread, are prepared by microbes solely for the service of man. For the yoghurt bacterium produces so much of the ferment and vitamins it prepares for man that it kills itself in the process.

And so, when our Glorious Book draws attention to the secrets of the camel's creation, it is also implying various other events pregnant with meaning, and invites men to awake from heedlessness at the same time that they benefit from these divine gifts:

"O Mankind, if the camel had lived its own life, it would have repaired to the forests. Yet it endures the hardships of the desert in order to serve you, assuming a tame and obedient nature in spite of its large size. Why, then, do you disobey the commands of your Lord?

"Why are you in rebellion, when even that animal is a model of patience?"

PAGES OF THE COSMOS

●

يَوْمَ نَطْوِي السَّمَاءَ كَطَيِّ السِّجِلِ لِلْكِتَابِ كَمَا بَدَأْنَا
أَوَّلَ خَلْقٍ يُعِيدُهُ وَعْدًا عَلَيْْنَا إِنَّا كُنَّا فَاعِلِينَ ﴿١٠٤﴾
الْأَنْبِيَاءُ ١١

The day that we fold up the heavens like a book:
Just as We produced the first Creation (opened it
page by page), so shall We restore it again. This is a
promise binding on Us, and surely We shall fulfill it.

Pages of the Cosmos

One of the most difficult verses to fathom in the Koran is this verse that likens the heavens of the universe to the pages of a book. By the universe we here mean the material universe, since the material universe is symbolized by 'heavens.'

Why does the sacred verse compare the layers of heavens to the leaves of a book? Doubtless there are many reasons for this similitude, some of which we may summarize as follows.

a) Foreordination placed the fate of heavenly spaces on the Guarded Tablet page by page. These pages, like the tape of a computer, are of course the record of an invariant order.

b) The differences in magnetic potential between heavens are compared to pages. Every space constitutes a separate divine system with its own conditions.

c) Heavenly spaces and strata possess a divine order that can be opened and closed like the leaves of a book. The increase or reduction and elimination of distances is simply a decision for the Divine Will.

d) By comparing the creation of the heavens and physical space to the opening, and the end of the world to the closing, of a book (or rolling up a scroll), the verse

underlines a fundamental precondition of material existence: Namely, extension. In other words, material existence consists of spatial tensions at various distances like opening the pages of a book. And this is the point at which I want to begin the interpretation of this verse. What manner of physical phenomenon is material existence?

It will readily be acknowledged that material beings is the occupation of a certain extension in space. The novelty of the verse lies in the analogy it draws between this definition and opening the leaves of a book. The passage: "*Just as in our first creation*" in the second sentence of the verse emphasizes this point. Let us now take a look at some examples.

1. How does a planet exist? By occupying space at a certain distance from its center of attraction, right? And it tries to preserve this distance by revolving around it, right? Does not our own world preserve its existence by obeying the same principle? Here is the occupation of a definite place at a definite distance, just like the leaves of a book.

2. How does the atom exist? Is it not a system where electrons occupy space at a certain distance from the nucleus, the center of attraction?

3. What is the quantum wavicle, considered to be the basis of existence? It represents a standing wave in the fabric of spacetime, the crests and troughs of which resemble the consecutive leaves of a book.

Material beings, therefore, unfold like the leaves of a book by occupying various magnetic potential levels at various distances in space. If the Divine Will calls a halt to extension, matter collapses instantaneously. And if Divine Omnipotence wills, new existences with new distances are

formed. It is this physical fact, difficult as it is to comprehend, that the sacred verse reveals.

Let us now take another look at the collective interpretation of the verse. It introduces a decisive clause full of divine portent against the hesitations of men in believing in the Day of Judgment. The Judgment is the transformation of all or part of the universe into another mode of existence. There are many examples and descriptions in the Koran on this subject. From the verses concerned, we understand that the first phase of the Judgment is one of total destruction and annihilation. Subsequently, we shall all be projected to a new continuum. This verse introduces the mathematical and physical reality of that destruction and incomprehensible conversion, comparing the abolition of distances and the folding of space to the pages of a closing book. Conversely, it defines Genesis as the emanation of distance and the unfolding of space, like a book being opened. In this similitude, each space willed into existence is compared to a page in the book. The worlds are composed of nested universes like a book in front of the Exalted Creator: If He wills, He enables extension, creating the manifold worlds and heavens; and if He wishes, he abolishes distance, and continua are folded over to another page.

Another important concept of the verse relates to Heaven and Hell. Modern man is especially eager to seek Heaven and Hell in a separate corner of the material universe: In another galaxy, for example. The sacred verse, however, informs us that Heaven and Hell are located on another page in the Book of Totalty. They are neither near nor far from our location; they are simply on another page. And when God turns to that page, no spatial difference and no distance will remain between us and them.

THE CREATION OF JESUS AND ADAM

●

إِنَّ مَثَلَ عِيسَىٰ عِنْدَ اللَّهِ كَمَثَلِ آدَمَ خَلَقَهُ مِنْ

تُرَابٍ ثُمَّ قَالَ لَهُ كُنْ فَيَكُونُ ﴿٥٩﴾

الاعين -

The likeness of Jesus in God's sight is as that of Adam; He created him of soil, then said to him: 'Be', and he was.

The Creation of Jesus and Adam

References to Adam's creation occur in 14 verses of the Glorious Koran. Sacred books antedating the Koran also mention that Adam was created from the soil. However, the Koran brings clear explanations to this creation, and I propose to comment on these verses.

"We created man of a quintessence of clay."⁽⁵⁾

"He (God) has created all things well, and He originated the creation of man out of clay."⁽⁶⁾

"... We created them out of sticky clay."⁽⁷⁾

"Your Lord said to the angels: 'I am about to create a man from clay. When I have fashioned him, and breathed into him of My spirit, prostrate yourselves before him at once."⁽⁸⁾

."(God) created man of baked clay, similar to pottery."⁽⁹⁾

(5) The Believers, 23:12

(6) Prostration, 32:7.

(7) The Rangers, 37:11.

(8) Sa'd, 38:71-72.

(9) The Compassionate, 55:14.

"And God has produced you from the earth, as though you grew out of it."⁽¹⁰⁾

Let us first derive a **general definition** from these proclamations of the Koran **regarding the creation of Adam and hence of man**, and then **discuss and explain the subject scientifically in detail**. What is the collective decree that emerges from these verses?

a) Adam was created from clay by the Divine Will: God said 'Be', and he was.

b) Adam did not evolve from another organism, just as certainly as Jesus did not have a father.

c) That clay resembles mud; it is sticky and viscid.

d) After creating the body from clay, God breathed into ('in-spirited') Adam of His own soul.

The conclusion that can be reached on the basis of these verses is that Adam, and consequently man, has not evolved from other creatures. He has not undergone evolution; God said 'Be', and he was.

Actually, the above verses proclaim great scientific truths about the creation of Adam. Unfortunately, modern man has been brainwashed by the tale of evolution, so that we must first address this bit of untruth. For as long as anything remains in the human mind of this fable, the truth of man cannot be understood; nor can complete faith in the Koran be assured.

What is the Myth of Evolution?

About a hundred years ago Charles Darwin, a

(10) Noh-71-17

clergyman graduated from Christ's College, Cambridge University and with no previous background in medicine or biology, claimed that man was an animal who had evolved from unicellular organisms and had descended from the apes. A lot of scientists jumped on his bandwagon, and soon the myth called evolution was going full speed. This view was taught for years in all educational institutions as if it were a fact of science.

According to one modern scientist, Duane Gish, evolution (i.e. the descent of man from an animal) is a philosophical notion without any scientific basis in fact. R.B. Goldschmidt, a professor of biology and one of the most fervent proponents of evolutionism, is yet honest enough to admit that no unequivocal scientific evidence exists in favor of evolution, and that it is simply a way of thinking. The Oxford Dictionary states that for a theory to be scientific, it must embody observed facts within a framework of general laws.

The Most Progressive Evolutionists

Not everybody realizes that as the crushing scientific evidence against Darwinism and neo-Darwinism continues to pile up, opposition to evolution, long considered to be the domain of cranks, has in the last few years been joined by a progressively increasing number of mainstream biologists. As Jeremy Rifkin points out in his recent erudite and devastating critique of the evolution myth, eminent biologists and zoologists such as C.H. Waddington, Pierre-Paul Grasse, and even Stephen Jay Gould have played their part in exposing evolution for the pseudoscience (the epithet is Grasse's) that it is.

Prof. Goldschmidt and Prof. Macbeth make it clear that

there is no scientific proof of evolution. This is the truth behind the theory of evolution, which the semiliterate assume to be established science. Some of the pictures given in books by evolutionists are total fabrications. Despite these elementary facts, I would like to explain the inside story underlying certain biological phenomena which evolutionists believe support their case, so that no door should be left open to concession in the minds of those reading the verses and their interpretation.

1. In accordance with their earlier conceptions, evolutionists still classify cells as primitive or evolved. After 1955, however, it was realized that 99 % of cellular structures are identical, and that this value is 100 % for DNA, the chemical building block. The difference between cells lies in their mathematical programs. That is, a plant cell is programmed to process oxygen, while a liver cell is geared to produce bile. Since one cannot speak of computer programs serving different purposes as being primitive or evolved versions of one another, evolution, i.e. the gradual attainment of perfection, is not a valid statement. Evolutionists should first disabuse themselves as regards the relationship between a cell and its mathematical program.

✓ 2. According to evolutionists, the reason why evolution cannot be observed today is that it takes place very gradually, in millions of years. In 1965, however, a new island (Surtsey) was born near Iceland in submarine volcanic upheavals, and hundreds and thousands of insect and plant species emerged there within the interval of a year. It is still not understood how and whence they came.

3. According to evolutionists, evolution has occurred through mutation, that is, the alteration of genetic traits. This claim is a distortion of the truth in the clearest sense of the term. Mutation is never constructive; it is destructive. In

the experiments of Muller, who discovered mutation, there was no gene alteration but rather, gene destruction. The same is true for all subsequent mutation experiments: Traits are not altered, but destroyed. Either cancer or death is the result, or else the impaired trait leads to a weaker organism (like Müller's green-eyed flies). In spite of the thousands of experiments conducted to date, no one has yet obtained a new organism from the mutation of another, very similar organism. In the bone marrow, on the other hand, millions of different cells are produced from a parent cell each second. Surely if there had been any truth in mutation, the phenomenon should have been firmly established by this time.

4. Evolutionists claim that skeletons linking man and the primates exist. Piltdown man, the most famous of these, was proven to be a fake by radioactive experiments, and thrown out of the British Museum together with the trash — (topic 4)—

Furthermore, the brain of a primate weighs 130 grams, whereas that of a human being weighs 1350 grams. According to evolutionary theories, there should be at least ten intermediate organisms in between. It is inconceivable that none of these have survived. We must ask the evolutionists: Since the ape itself still survives in all its varieties, where are these ten types of organisms on the road from primate to man?

5. Evolutionists have gone so far as to declare that the appendix in the human gut is a useless leftover of evolution. The appendix is, however, one of the most active organs in the body, serving as the 'tonsils' of the lower abdomen. It secretes intestinal fluid and regulates the types and quantities of intestinal bacteria. There are no useless organs in the

body; quite to the contrary, each organ performs several different tasks simultaneously.

6. The question of the purpose of evolution: Evolutionists do not believe in God, yet look for a purpose in evolution. They assume increasing complexity and perfection in the chain from primitive to (in their view) elevated organisms. But to assume such an ascent is both arbitrary and subjective. What is meant by perfection? In terms of decorative colors, for example, the butterfly is at the zenith. In terms of electronic equipment, the bat is unrivalled, with the terrific radar-vision system in its possession. The most developed organism capable of memory retention in terms of brain weight is the dolphin, and the most evolved animal in terms of warfare is the termite, which is smaller than an ant. The weapons used by termites are poisons with a boiling point of 100 degrees that can kill any organism in their environment. Who, then, has evolved from whom? In terms of chemical warfare, the ape is a more retarded organism than a termite.

7. Evolutionists contend that organisms are subject to natural selection or to the "survival of the fittest", and give dinosaurs as examples of species that have become extinct. But among the one-and-a-half million species of organisms, those which have become extinct do not reach a hundred. We shall discuss their extinction in (our topic 38)—. What is really significant here is the fact that organisms have survived under the most difficult circumstances of life for millions of years. I would like to give three outstanding examples of this.

a) Blind fish: A kind of fish lacking visual apparatus lives at the bottom of the ocean. Fish possessing sonar (sonic radar) systems and fish that 'see' by electric fields also live in the same ecological niche. If the evolutionists

were correct, the blind fish should have been displaced by the other two. But the three varieties of fish have peacefully coexisted for millions of years.

b) The blind snake is actually a kind of lizard. Since it lacks appendages, life is especially difficult for this creature; yet it too has survived for millions of years. It neither becomes extinct, nor evolves into a lizard. Where are the principles of the fable called evolution?

c) A species of Australian porcupine carries its offspring over its belly like a kangaroo. Why doesn't it mutate to get rid of the bothersome quills sticking into its stomach and find peace like other porcupines? The reason is that God has willed it that way, and the porcupine is reconciled to life and servanthood. The evolutionist can never understand this mystery, for he is caught in a whirlpool of blind logic.

There is no such phenomenon, then, as natural selection; God has created all species in His endless exhibition of organisms.

8. The variety of species: If the notions of evolutionists were correct, a development would have occurred in every organism starting with the amoeba, and single species would have been formed like the links in a chain. That is, one variety of worm, one kind of fish or insect, one type of bird should have succeeded the amoeba, or at most several varieties of each. Yet there are more than 300,000 varieties of insects alone. What sort of evolution is this?

In each species of animals, furthermore, all conceivable types of appearance have been displayed. Almost as many species of organisms have been formed as there are possibilities in geometry and biology. Colors of all kinds

have painted more than ten thousand patterns on the wings of butterflies. Furthermore, each species has its large and small sizes, such as the lizard and the crocodile, the cat and the lion, or the guinea-pig and the boar. If evolution existed, each organism should have developed in one direction alone, whereas God has, as it were, created a grand exhibition from the almost infinitely numerous species of organisms.

9. The impossibility of evolution from the standpoint of various sciences has emerged in recent years.

a) There can be no evolution in physics. Heavier elements cannot be formed by hydrogen, at least in peaceful terms. For if you try to obtain helium by combining 2 or 4 hydrogen atoms, you obtain a thermonuclear bomb, and the entire environment is vaporized in a mushroom cloud.

b) Mathematically, evolution is an impossibility. For a worm to be formed from an amoeba, 39×10^{20} alterations are needed in its genetic code, which would take ten trillion years to produce at the rate of one change per second, or about five hundred times the age of the observable universe. The number of alterations in genetic code needed for an ape to evolve into a man amounts to 3×10^{520} changes, which is a number so inexpressibly large that even after taking the fourth power of the total number of particles in the universe, we still could not begin to approach it. For further comparison, the total volume of the universe in terms of the diameter of an electron does not exceed 10^{124} . All this shows that evolution is a mathematical impossibility.

c) Biologically, there can be no evolution. To this day, no one has been able to change even one cistron (a length of DNA that codes for a particular protein) using scientific methods. There is not one example where this genetic

change has been achieved in any organism. The reason is that the genes, which embody the code of organic architecture, are under the protection of a very special system. If they were not, the world would be filled with bizarre creatures overnight. Evolution, therefore, is biologically impossible: As Nilson Heribert states, species are types that do not change and cannot change.

Prof. Max Westenhofer has proved in his study that the phylae of fish, birds, reptiles and mammals have all emerged coevally, and states that Prof. Weismann's Java Man is a travesty of science. Similarly, Prof. Gish has informed the scientific community that the primitive human skeleton known as Nebraska Man is wholly artificial, and that an entire skeleton has been reconstructed on the basis of a single tooth.

We must always bear in mind that evolution is a deliberate deception, and forms the basis for perverse beliefs that spell ruin for societies. Those who are interested can consult the following sources:

1. Jeremy Rifkin, *Algeny*, Middlesex: Penguin, 1984.
2. Paul S. Moorhead and Martin M. Kaplan, eds. *Mathematical Challenges to the Neo-Darwinian Interpretation of Evolution*, Philadelphia: Wistar Institute Press 1967.
3. Norman Macbeth, *Darwin Retried: An Appeal to Reason*, Boston: Gambit, 1971.
4. Duane T. Gish, *Evolution: The Fossils Say No!* San Diego: Creation Life Publishers, 1978.
5. John Moore, *On Chromosomes, Mutations and Philogeny*, Philadelphia, 1971.

6. Walter J. Bock, Book review of *Evolution by Orderly Law, Science, 164* (1969).

7. Harold Francis Blum, *Time's Arrow and Evolution*, Princeton University Press, 1968.

8. Nilson N. Heribert, *Synthetische Artbildung*, University of Lund, Sweden.

9. Pierre-Paul Grasse, *Evolution of Living Organisms*, New York: Academix Press, 1977.

10. David Raup, "Conflicts Between Darwin and Paleontology," *Field Museum of Natural History Bulletin*. January 1979.

There are many more things to be said regarding the unscientific nature of evolutionism, but I shall leave the subject at this point. If any reader still has scientific doubts about evolution and brainwashing, he may write in personally and receive the requisite reply.

The most famous of Jewish and Christian scientists do not believe in evolution, but remain spectators in this game of pandemonium. The fact remains that there is no such scientific creature as evolution: It is an imaginary theory and philosophy. In other words, the claims in the name of science about the origin of man are wholly untrue. There is no scientific proof and no shred of evidence today that demonstrates the origin of mankind.

What, then, is that origin? We shall try to answer this question by recourse to the verses of the Koran.

Adam and Man

God informs us that He created Adam of a special kind

of clay. This clay is essentially sticky mud. However, the verses I have quoted above do not allow the soil from which man was created to be considered as a uniquely special compound. For the Almighty states that He *"created him from soil, then said 'Be', and he was"* (3:59). If the soil from which Adam was created had possessed a unique biological property, the command: *"God said 'Be', and he was"* would not be necessary: Instead, that soil would deliver the biological result automatically. On the other hand, a certain restricted property of this soil is indicated in other verses, defining it as sticky, viscid and of the texture of mud. Why has our Exalted Creator declared these qualities for Adam's clay in the Koran?

A hundred years ago, it would have been impossible to answer this question. But today we can grasp very well the characteristics of such soil. In clay and sticky mud carbon and nitrogen atoms have negative valences: C^{-4} and N^{-3} .

What is the secret that this property conceals? The answer is that oxygen, phosphorous and hydrogen occurring naturally in the soil can combine only with negatively charged carbon and nitrogen to form the basic constituents of the human body. This is the secret that the above three verses contain. What, then, are the conditions under which negative carbon and nitrogen can build a human body by combining with the hydrogen, oxygen and phosphorous in the soil? For even if all the basic substances are present and aided by catalytic circumstances, these cannot produce a cell and, consequently, a human body. So what is necessary?

What is necessary is the mathematical Will that will condition (program) these substances at certain angles and appropriate distances. This is why God, in order to clarify this truth, declares: *"I said 'Be' to that clay."* God's com-

mand to "Be" is the mathematical program code ('source code') in the Guarded Tablet mentioned in various verses of the Koran.

God informs us of two important scientific facts in the creation of Adam's body:

a) Soil bearing carbon and nitrogen with negative valences,

b) The command to execute the mathematical program.

This mathematical program is a very interesting mystery.

In earlier verses I have already made mention of the DNA molecule, the basic substance of organisms. This molecule is composed of the negative carbon and nitrogen, and the oxygen, phosphorous and hydrogen described above. The traits of all organisms are coded as a mathematical program on strands of DNA, and this incomprehensible mathematical function can proceed only through God's command to "Be".

Indeed, all the bodily characteristics of all human beings have been coded into Adam's sperm as a program. The creation of Eve from Adam is another scientific marvel of this verse. Otherwise, God would have stated that He "created both Adam and Eve from mud." This genetic subtlety has been repeated in reverse in the case of Jesus. The Chapter of 'the Imran Family' underlines this marvel in Verse 59, expressing this genetic and biological miracle of Genesis. *This* is science. To seek for an ancestor of man, the apple of the Cosmos' eye, in fake photographs and fabricated skeletons is, on the other hand, a ridiculous deceit flying in the face of reason.

In explaining these biological marvels of Adam's creation in the Koran⁽¹¹⁾ God once again emphasizes what a wonderful creation that is. Man is composed of a material body programmed from soil, and a soul which God has in-breathed (inspired or in-spirited), delivered or enabled. When the two separate, death is the result.

Subject of the soul shall come in future verses. As for the body, it is a mathematical system constructed from molecules of matter. The genetic code in particular is a magnificent computer system no matter what perspective it is viewed from. All traits, from the form of the fingernails to the place of a mole on the face, have been encoded into a speck ten millionths of a centimeter in size, and with the extra touch of ten billion different fingerprints in ten billion human beings. This, and this only, is the creative secret of Divine Omnipotence.

(11) Prostration, 32:7.

TOPIC 26.

THE ELLIPSOIDAL OR SPHEROIDAL
SHAPE OF THE EARTH

●

وَالْأَرْضَ بَعْدَ ذَلِكَ دَحَاهَا ﴿٣٠﴾

الترغى

"And then He gave the earth an oval form (the
shape of an ostrich egg)."

The Ellipsoidal or Spheroidal Shape of the Earth

The older interpretations have rendered this verse as: *"He spread out the earth"*, whereas it has been assigned the above meaning in the authoritative interpretation prepared by the late H.B. Çantay and Dr.Ali Özek of the Istanbul Faculty of Theology.

The difference in interpretations arises from the meaning of the word *daha*. Various derivations from this root form words associated with the ostrich in Arabic. Let us give a few examples:

Al-udhiyyu: Ostrich nest.

Al udhuwwat: Location of an ostrich egg.

Tadahiyyan: To drop a stone in a hole.

The famous etymologist M. Shamsuddin renders *madha* as the hole of an ostrich egg in his dictionary, while Baydhawi finds the sense 'oval' in *daha*. The senses of *daha* as 'spreading' (*dahw*) are assigned out of necessity to the word and do not constitute its real meaning. Since it was meaningless to assign the sense 'ovoid' to *daha* (the egg of an ostrich), it has been rendered as 'spreading' by reference to the word *dahw*.

The real meaning of the word *daha* is 'ostrich egg.' Due to the etymological rules of Arabic, all dictionaries have equated *madha* with the hole of an ostrich egg. With the 'm' removed, some have not called it an ostrich egg, but 'spreading out' by analogy with *dahw* or *dahaw*. It is clear that these views remain innocent of the shape of the earth.

On the other hand, it should not be forgotten that those who have interpreted the verse in the sense of 'spreading' are not entirely mistaken, either. It is a secondary meaning and hence quite acceptable. My own opinion, however, is that the verse bears the meaning: "*And then we shaped the earth in the form of an ostrich egg.*"

I would like to draw attention to a further point before passing on to the commentary. The famous commentators who lived many centuries ago, such as Baydhawi, Razhi, Abus-Suud, and Madariq, have declared that the earth was uninhabitable when it was created and unfit for organic life because of its fiery heat, at a time when they had no recourse to scientific documents and solely on the basis of Koranic science. It is impossible not to be impressed by this mastery of the Koran.

Coming now to the insight of the verse in depicting the earth as an ovoid,

a) Among all the eggs of organisms, the one closest to a sphere is the ostrich egg.

b) The relative difference of the earth's North-South diameter in comparison with its equatorial diameter has given it an ellipsoidal shape. (More precisely, this shape is slightly distorted to form the true shape of the earth called a 'geoid', which resembles a pear) The equatorial radius of the earth is 6378 km, whereas its polar radius is 6356 km.

c) The verse explicitly and clearly indicates the spherical shape of the earth. Furthermore, it implies that the earth was not in this form at the time of its origin, in effect describing its state prior to solidification as one of shapelessness. In astrophysics, there are two views asserts that the earth was flung off as a fragment of the sun, while according to the other the sun and the earth both congealed from a nebula. Both theories are agreed that the earth was without form when it was first created, and gained its ellipsoidal shape subsequently. This verse, therefore, clearly reveals the oval or, in more technical terms, the ellipsoidal shape of the earth.

Here an important remark is in order. Other sacred books have addressed the peoples of their time with their edicts and call to worship. Similarly, their scientific declarations have doubtless been commensurate with perceptions in those ages. In spite of this, many of the decrees of those books have been preserved by the Koran, and thus are still valid.

The significant distinction of the Koran, however, lies in the fact that its rules will be valid for all eternity. This is because the Koran represents the Guarded Tablet, which is the mass information storage unit of the divine computer system. It is for this reason that the Koran has the miraculous property of comprehending all scientific truths, many lying centuries beyond the age in which it was revealed.

The roundness of the earth and — as I have pointed out in — earlier topic 8 — the rotation of the earth declared in the verses of the Koran constitute a beautiful reply to those who deride Islam. Such intellectual dwarfs have sprung up that they think men of religions still believe the earth is flat.

Another important aspect of the verse is that it is given in the 'Pluckers' Chapter, for this is a chapter that reveals many secrets of Genesis. Further, Verses 28-32 of this chapter summarize the creation of the earth. Indeed, Verse 31 declared that after the earth assumed its ovoid form, water was given and that the first flora of the earth — the pastures — were created, in that order. Modern geophysical conceptions are in complete agreement with this sequence: After the earth assumed its ovoid or spherical shape, the hydrosphere was formed and the oceans were created, plant life emerging subsequently.

If the verse is evaluated in the light of this perfect concord, its absolute and miraculous wisdom can be more readily appreciated.

THE SAMAD SECRET

●

قُلْ هُوَ اللَّهُ أَحَدٌ ۝ (١) اللَّهُ الصَّمَدُ ۝ (٢) لَمْ يَلِدْ ۝
وَلَمْ يُولَدْ ۝ (٣) وَلَمْ يَكُنْ لَهُ كُفُوًا أَحَدٌ ۝ (٤)

الإخلاص ١٢

1. Say: "He, God, is One
2. God is samed * (the Eternal, the Only One)
3. He has not begotten, nor been begotten,
4. And equal to Him is not any one.

(*) Everything owes its existence and survival to Him. Everything is in need of Him, He is in need of nothing. He is the One Being to whom everything must appeal for help.

The Samad Secret

The verses of the Koran dispose of all erroneous beliefs about the Great Creator existing prior to Islam. They very clearly explain the exalted greatness of God and how He should be comprehended.

One of the scientifically most important approaches to the concept of God is the *samad* secret. This divine wisdom, occurring in the second verse of the Sincerity Chapter, is extraordinarily important from the standpoint of modern science.

Let us first learn the etymological meaning of *samad*. Linguistically, *samad* bears three meanings:

- a) Complete, flawless, pure, whole.
- b) The infinite power that encompasses eternity and infinity.
- c) Invincible Divine force (Omnipotence).

The meaning that is based on the Prophet's sayings and given in all interpretations, on the other hand, is "that True Power on which everything is dependent but is itself dependent on nothing." Hence, *samad* is the Divine Omnipotence that the creature requires in order to exist and

to continue its existence. Conceived in scientific terms, *samad* indicates the true and real Power which does not wax or wane, and to which analysis and synthesis are not applicable.

It is very important to interpret all physical facts in the universe within the context of the *samad* secret. The urgency of thanksgiving and praise for creatures then emerges scientifically.

In view of the number of inhalations per minute, it used to be believed that a man needed the *samad* secret 16 times a minute. Is this really true? Let us observe in scientific terms how man stands in need of the *samad* secret, or Divine Omnipotence.

a) Materially, man is first of all composed of atoms. There are 7×10^{28} or ten billion billion billion, atoms in the human body.

Let us now calculate the relationship between an atom and the *samad* secret:

The atomic nucleus oscillates or resonates ten billion times a second. This vibration arises from the need of the nucleus to hold itself together. Because the protons in the nucleus are all of positive charge and neutrons are neutral, the nucleus should normally fly apart. But the strong nuclear force, mediated by another kind of elementary particle called the 'meson', serves to bind the nucleus together. The exchange of mesons between protons and neutrons occurs ten billion times a second, which is the frequency at which the nucleus of the atom stands in need of the *samad* secret.

Coming to the electrons surrounding the nucleus, these revolve around the nucleus 100,000 times a second to

maintain their positions (in the Bohr model of the atom). Since they move in elliptical orbits, they require the *samad* secret at the apogees and perigees of the ellipse, or 4 times in each revolution, which makes 400,000 times per second.

14×10^{29} electrons are assumed to exist in the human body. Hence, the human being requires the *samad* secret $10^{10} \times 7 \times 10^{28} + 4 \times 10^5 \times 14 \times 10^{29}$ or 70.056×10^{37} times a second, where 10^{37} is expressible as ten trillion trillion trillion. This is the number of times the human body stands in need of the *samad* secret per second, considered in terms of its atoms alone. If this need was not fulfilled for even an instant, the human body would explode and be annihilated like an atomic bomb.

b) Turning to the necessity of the *samad* secret for cells, recent research has revealed that there are about 2000 chemical laboratories (mitochondria and Golgi vessels) in the average cell which ceaselessly process chemicals. Each one of these tiny cellular laboratories is under the guidance of a computer, and gives the cell its character by running a computer program.

These 2000 miniature laboratories are in continual need of the *samad* secret to run their programs, to the tune of 15,000 times per second. This means, then, that the *samad* requirement of the whole cell is thirty million times a second. If this value is calculated for the blood cells produced in the bone marrow, the *samad* need for the alterations in genetic codes runs into the billions.

Since there are 30 trillion cells in the human body, the human body biologically needs the *samad* secret a billion trillion times a second, taking the average cell as basis.

c) And what of the *samad* need of the organs; the

adventure of a food morsel till it is digested and consumed via the blood? If even one of those thousands of processes are interrupted, we are in the sickbed in a flash. I have performed a thorough investigation of the processes involved, and if we omit the details, my calculations reveal that a human being is physiologically and biochemically in need of the *samad* secret 4×10^{37} times a second. To give an elementary example, if the lymphocytes which protect us against all illnesses were to lose this *samad* secret for even a moment, we would be consumed by bacteria or cancer cells.

The *samad* mystery is not simply a divine power oriented towards human beings, but the basic support of all universes. The potency that upholds and maintains atoms, plantes, suns and galaxies is this *samad* secret of God. Not a single being in the universe could survive in its absance, but would be instantly annihilated.

Giant assemblages of stars, or galaxies, pass through each other and the order of not even one planet is disturbed. Astronomers have witnessed this extraordinary event with amazement in recent years.

Of course nothing is disturbed; For God is *samad* (*Allahussamad*).

THE MYSTERY OF MOUNTAINS

●

وَالْقَىٰ فِي الْأَرْضِ رَوَاسِيَ أَن تَمِيدَ بِكُمْ

وَأَنْهَارًا وَسُبُلًا لَّعَلَّكُمْ تَهْتَدُونَ ﴿١٥﴾ النحل

And He has set up on the earth firm mountains, lest it should shake with you; and rivers and roads, that you may be guided.

The Mystery of Mountains

Before interpreting the sacred verse, I would like to take a short look at the geophysical events that have taken place from the origin of the earth to this day.

As everyone knows, the core of the earth consists of magma and molten metals beneath a crust of soil and rock. Taking both this structure and stellar compositions into account, it is believed that the earth, when it was first created, was a ball of fire at very high temperatures consisting mainly of metals in molten form. It is not known with certainty, however, how the soil and rock strata and the oceans were formed. Needless to say, explanations to the effect that gradual cooling resulted in the earth we observe today provide an easy way out. However, the views propounded regarding the formation of oceans in particular are figments of the imagination. According to some scientists, water molecules emerging from the boiling caldron of the earth have cooled slowly in the atmosphere, precipitating torrential rains and thus forming the oceans. But it is inconceivable that a drop should fall on a seething fireball and that many such drops should accumulate there. It is also impossible to assume that water vapor condensed at the Poles and flowed into the ocean basins as water — how can a caldron of fire freeze at opposite ends?

The existence of the soil structure (i.e., silicon compounds) forming the crust of the earth is, however, a fact. The truth is that God's program of divine science has installed durable silicon compounds on the surface of the earth, and a sort of 'boiler shutdown' has occurred. The surface layer of the earth has solidified and covered the inner core of fire, thus allowing water to remain in areas of depression. If such a 'shutdown' has not occurred, no water could have accumulated on earth and the oceans could not have formed. Indeed, many planets in the universe are believed to be devoid of water and to lack this structure. This crust of soil that covers the inner fire of the earth is definitely not a natural result, since there are many substances lighter than silicon which should have gravitated to the surface in its place. Had not this crust been formed by the program of the Grand Creator, furthermore, and had — God forbid — formed by itself, this thin layer would have been torn apart by the storm raging inside, and the fiery core would have burst out to the surface, annihilating the latter.

In order to stabilize this crust, our Exalted Creator has, so to speak, placed large weights on it. These are the mountain ranges, in whose structures potassium, silicon and many metals are concentrated. Mountain ranges cover the earth both on land and on the ocean floor on the basis of the most delicate calculations, almost as a physical *gravure*. This is how that searing fire at the center of the earth has been brought under control.

Let us now reread the sacred verse in the light of the above information.

Mountains are a kind of lightning rod that ward off earthquakes. Without the mountains, the ceaseless motion

and continuous flow in the earth's core would not allow us to sit still for a second. We would experience perpetual earthquakes, and not even be able to raise a tent, let alone build cities. The sacred verse, then, reveals to us this structure of the earth from across a span of 14 centuries, and introduces the infinite order in creation.

Volcanoes, about which atheists make queer and outlandish interpretations, are also a blessing of the Divine. If not for volcanoes, we would be able to see many metals only in space museums. Volcanoes are metal production plants that deliver many substances from the earth's core to the surface. Further, they act as safety valves on the core, which would cause much more violent terrestrial activity if these were suppressed.

Those who do not view God's infinite wisdom through the prism of the Koran's secrets, then, will never be able to learn a thing.

PROGRAM AND PREDESTINATION

●

الَّذِي خَلَقَ فَسَوَّى ۖ وَالَّذِي قَدَّرَ فَهَدَى ۖ ﴿٣﴾

(الاعلى ٤٨ آيت نمبر ٣)

He has made everything in order and proportion,
ordained laws and granted guidance

Program and Predestination

We evaluate the meaning of this verse in three ways:

- a) He ordained, He presented.
- b) He gave fate, He provided and completed predestination.
- c) He programmed, and He saw His program through to its end.

This verse is the fundamental law on which physics and biology rest. It expresses a scientific truth of such importance that it is not possible to understand physical and biological phenomena without comprehending this verse. Even these two sciences have been able to fathom the verse only in the last fifteen years.

The Chapter of the Most High begins with: *"Magnify the name of your Lord the Most High, Who created and shaped,"* and this verse comes right afterward. God, therefore, creates, beautifies, and then first programs (ordains, gives fate) and next, by His grace, presents as a gift the uninterrupted operation of that program to its conclusion.

Now in present-day terms, this third verse expresses

the life stories of all creatures large or small. Let us therefore seek the secret of the verse in various phenomena, and observe how fundamental a law of physics and biology it is.

1. The Biographies of Atoms and Molecules

An atom bears a certain number of electrons around a nucleus of definite charge. Why is this element oxygen, while that one is carbon? Because God has programmed each atomic nucleus, and also programmed the energy orbitals surrounding them. Definite numbers of electrons have been programmed with definite speeds in these shells. Divine Omnipotence grants that this program be performed as a gift, and ensures that the aim of the program is fulfilled. It is not possible to consider atoms apart from divine law.

According to the Principle of Uncertainty set forth by Werner Heisenberg, one of the most famous physicists of our time, it is not possible to predict individual physical events that will occur in an atomic nucleus. How, then, do atoms continue their existence? Because God has programmed them and sees to it that they achieve their goal. Here is how a world-famous physicist has vindicated the verse without realizing it.

2. Organic Cells

As I have mentioned in the commentary of a separate verse, the story of life is entirely a matter of programming. The difference between a plant, an insect and a sheep, so dissimilar in their external appearances, consists of the variations in the programs loaded on their DNA coils. In other words, the basic building block of a brain cell and a flower or butterfly cell is the same, all of them having been

formed from the genetic codes composed of DNA helices. The difference in their life stories is due to the diversity of mathematical programs on these genetic units. The Lord of the Worlds has endowed each one with a definite fate, and then enabled it to attain this fate. This is the point at which the science of biology has arrived in recent years, dimly beginning to perceive the basic law indicated by the verse. Formerly, however, the differences were thought to arise structurally, and thousands of misinformed intellectuals were sent on wild-goose chases after perverse theories of evolution. If science had become aware of this scientific law contained in the Koran a hundred years ago, millions would not be poisoned daily by materialist nonsense today, and the world would not have become the witch's caldron that it is.

3. Planets, Galaxies and Their Divine Programs of Destiny

Formerly, it was also believed that planets were formed as the remnants of novae. Later, it was discovered that galaxies (systems composed of billions of stars) are formed from quasars, a kind of seedbed for galaxies. A programmed (ordained) galaxy waits ready in a quasar in seed form, and blooms into a galaxy with its countless billions of stars when the Divine Will ordains. In other words, it fulfills its destiny thanks to the Divine Will.

How did the verse being interpreted describe creation? "He programs (preordains) and presents as a gift (leads to realization)." Faced with the scientific and miraculous magnificence of this basic law of creation in the Koran, one can only prostrate oneself, as is indeed ordained in another verse of the Koran.

THE EXPANDING UNIVERSE

●

وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ قَدَاتًا لِّمُوسِعُونَ ﴿٤٧﴾

(الذريت ٤٥ آيت ٤٧)

We built the heaven with might, and We expand it
wide.

The Expanding Universe

The sacred verse clearly reveals that the universe is expanding outwards from a central point. As I have suggested in Topic 21('The Sevenfold Heavens'), the expansion of the universe means the expansion of its magnetic bands or heavens. An important message is contained in the beginning of the verse, however: The heavens are shaped by the Divine Omnipotence of God Almighty. Naturally, everything in the universe is within the power of the Almighty. The significant point here is the emphasis on the fact that the magnetic band potentials of the heavens represent Divine Omnipotence, as expressed by: *"We built the heaven."*

The basic principle of existence of the world of infinitely many objects which we call 'multiplicity' is extension. Indeed, modern astrophysics takes this rule to be the fundamental concept in cosmogony. Both the big bang theory and the view of an expanding universe with special reference to quasars herald the acceptance of this concept by modern physics. According to this view, the universe has spherically exploded in concentric layers from a singularity containing infinite energies, and has coalesced through local compressions and rarefactions of matter and energy. The expansion due to the vast initial explosion is still continuing. Of course, this theory does have its controversial aspects. However, it lends expression to two basic rules

needed for the existence of beings, that is, for their location at certain addresses in space:

1. To acquire extension and be cast in a certain location.

2. The need for a magnetic potential in order to remain in that location.

This sacred verse, therefore, indicates this expansion as a basic law for creatures to exist and to occupy a certain position in space, with its decree: *"We expand heaven wide."* How can the revelation of such a message of astrophysics 14 centuries ago be explained in any way other than as a miraculous secret of the Koran?

Astrophysicists express this expansion today in terms of a distance of twenty billion light years. That is, the radius of the observable universe, with its concentric bands of heavens, is twenty billion light years, or about 193×10^{21} kilometers. In recent years, radio telescopes have also provided evidence that this limit is expanding at nearly the speed of light.

In the big bang theory, it was initially believed that energy decreased from the center outwards. After the discovery of quasars, it became clear that there are unbelievable energy sources all over the universe. Far from being on the wane, violent energetic phenomena are occurring constantly. On this point, too, recent research has confounded atheistic scientists.

The investigation of galaxies reveals that the center of this expansion is our own galaxy. Seasonal stellar distributions visible from the Northern and Southern hemispheres also confirm that our galaxy is the center of expansion. Since spacetime is isotropic, however, an observer in any other galaxy would note the same effect

It is quite natural, of course, that creatures of God

should exist in every corner of the universe. There is a concerted effort in our day, however, to convince people that visitors have arrived from space. Once the fairy tale of evolution they had been spinning for years exploded, atheists next began to talk of extraterrestrial life and intelligence.

- The fact is that when the billions of stars are inspected, almost all of these are seen to possess unbearable heat and terrific storms of energy. The Exalted Creator has also created beings at these locations, beings which have structures made of energy. Certainly the entire universe cannot be deserted. Quite possibly, beings akin to angels and the jinn are serving God at these locations, a subject we shall return to in the topic on angels and jinn (Topic 36)

Due to this verse we have interpreted, the great thinkers of Islam have accepted that God's attribute of continuous creation ('the Creator') operates ceaselessly throughout the universe (Cf. Ibn Arabi's wisdom of the *Prophets*). If we inspect this verse from the astrophysical standpoint together with the sevenfold heavens and the pages of the cosmos, we behold with amazement how uncannily the Koran is revealing the astrophysical facts of our age.

Unfortunately, the physical and mathematical researches initiated by Jabir of Khorasan, al-Biruni and Omar Khayyam (who was actually a mathematician) on the strength of the culture of Islam, have been snatched out of our hands. We have even failed to notice that the atheists obtained their main facts from the scientists of Islam. How sad it is that even in this day and age, we have members of the scientific community who have never even heard of the scientists named above.

THE MICROCOSMIC RECORDS IN THE
COMPUTER CENTER
OF DIVINE OMNISCIENCE

●

وَقَالَ الَّذِينَ كَفَرُوا لَا تَأْتِينَا السَّاعَةُ قُلْ بَلَىٰ وَرَبِّي
لَتَأْتِيََنَّكُمْ عِلْمُ الْغَيْبِ لَا يَعْزُبُ عَنْهُ مِثْقَالُ ذَرَّةٍ فِي
السَّمَوَاتِ وَلَا فِي الْأَرْضِ وَلَا أَصْغَرُ مِنْ ذَلِكَ وَلَا
أَكْبَرُ إِلَّا فِي كِتَابٍ مُبِينٍ ٣٤

Not even the least little atom in the heavens or on
earth escapes His knowledge; nor is there any thing
less than that, or greater, that is not in an Open
Book.

The Microcosmic Records in the Computer Center of Divine Omniscience

This sacred verse bears extraordinarily important messages in connection with the microcosmos, the most exciting frontier of physics.

Without going into needless detail, we must first inspect the definitions and terms occurring in the sacred verse with care. The original version of "the least little atom" in our rendition is "the smallest particle measurable physically" (*misqala zārratin*). A second definition involves the concept of *asgar*. In our translation, we have rendered this as 'smaller, lesser'. However, *asgar* is closer to 'much smaller' than to a slightly smaller size; its Latin equivalent would be 'minimum'.

Another difficulty in translation that needs clarifying is the concept of "Open (Manifest) Book". The phrase 'Open Book', which is interpreted as the Guarded Tablet, occurs in many verses in the Koran. Previously, it was necessary to comprehend the Open Book as a book in which everything is recorded. This approach, however, was insufficient for an understanding of the riddle of the universe. In our day, though, it is possible to reach a much better appreciation of this definition. In my various books, I have tried to approach this concept as a computer center that records all laws and decrees related to Destiny.

In order to interpret this verse, I would first like to summarize the physical structure of the microcosmos.

What Is the Microcosmos?

2000 years ago, the Greeks used the term 'atom' for the smallest unit of matter. The term 'particle' (*zarra*) was in use in Egypt, Assyria and India 5000 years ago. The atom, conceived as the smallest part into which matter is divisible (*a-tom*: in-divisible), introduces only the concept of smallness. The word *misqal* in Arabic, however, is slightly different. According to my investigations, this concept was first introduced in the Koran. For if the smallest measurable objects are recorded in the computer of Divine Omniscience, this clearly means that these particles possess mathematical and physical properties.

Let us now see how modern physics describes the microcosmos.

The tiniest objects in the universe are the constituents of all matter, including the largest galaxies. All the properties of matter are determined by the microcosmic systems composed of these infinitesimals, called "elementary particles" in modern physics. All the different things we observe, such as iron, air or trees, arise from different combinations of these particles at the microcosmic level.

The microcosmos possesses a centralized structure. The nucleus of the atom may be described as its metropolis: It is composed mainly of protons and neutrons. The strong nuclear force binds these together, providing continuity for the nucleus and hence, the existence of matter. Around this nuclear 'city' are clouds of electrons at various energy levels, or microcosmic 'heavens'. I have mentioned some properties of the microcosmos earlier in discussing the

Sevenfold Heavens (refer topic 21) and *hunnas/kunnas* – (refer topic 6). In the nucleus, the capital of the atom, the following elementary particles lie hidden in addition to protons and neutrons: the meson, the neutrino and anti-neutrino, *bremsstrahlung* (rays excited by the entry of a particle into the nucleus), and quanta of various x-rays and gamma rays trapped in nuclear energy levels. All of these are much, much smaller than the atom itself. We shall be inspecting some of their properties below.

Do you see, dear reader, the unbelievable physical message contained in the verse? It is informing us from across 14 centuries that constituents of matter much smaller than the atom are recorded in the center of Divine Omniscience.

But why are these particles coded in the Open Book, the center in which all information is clearly recorded? What happens if something is recorded in this science center? It is assigned a scientific destiny. The physical structure of particles is determined by their records in this center. The particles take their invariant mathematics from this computer.

These words are not guesswork; nor are they my personal opinions. According to Werner Heisenberg, one of the five most famous physicists in the world, it is not possible to predict individual physical events that will occur in the atomic nucleus. This is known as the "Principle of Uncertainty". How, then, do these minute particles continue their existence? Why are they not instantaneously transformed into energy? The sacred verse answers this question quite explicitly: "Particles much smaller than the atom are programmed in the Center of Divine Omniscience". It is thus that these infinitesimals carry out the Open Book version of the ordained program without falling into chaos and confusion.

Another marvel of the verse is that it informs us of the existence of these 'indivisibles' and smaller particles, i.e. atoms, protons, neutrons and the like, in the heavens as well. It was impossible for men living in those ages to associate the concept of particle with the heavens, when it was accepted in its most primitive form even for the earth.

What kind of physical action does the destiny of these subatomic particles in the Open Book imply? Let us try to discover the answer in a new branch of physics.

Nuclear Magnetic Resonance (NMR) identifies each molecule and atom by the vibrations, or "sounds", it emits. NMR is a quantum-mechanical phenomenon exhibited by atomic nuclei with an odd number of either protons or neutrons. Such nuclei possess nonzero spin, endowing them with a small magnetic field. When these are placed in an external, static magnetic field, they become aligned with it. During the process of alignment, the nuclei oscillate, or precess, around the magnetic field. This resonant oscillation is called the NMR phenomenon. The application of the external magnetic field may be compared to the 'tuning' of a stringed musical instrument.

Once the nuclei are aligned with the external field, however, the net magnetization contains no oscillating component. To observe an NMR signal, therefore, it must be perturbed away from equilibrium. The application of a second, time-varying magnetic field, thousands of times weaker than the original field and in a direction orthogonal to the latter, creates this perturbation. This field — typically a radiofrequency (RF) field — must, however, precisely match or resonate with the oscillation frequency (called the Larmor frequency) of the nuclei. This application of the second field is akin to 'hitting' a string of the instrument, and the nuclei respond by emitting a 'note' at the megahertz

level. The tone emitted varies for each kind of atom and for each static field value. This vibration is converted to electric voltage, and each nucleus is identified by the tune it hums.

This, then, is the "music of the spheres" on a subatomic level. In the Ya Sin Chapter (36:40), the declaration that: *"Everything and every particle spins in a definite orbit and sings the praises of God"*, indicates that these melodies are the iteration (*dhikr, mantra*) of God's names. Hence, it is written in the Open Book Center of Divine Omniscience which song and mantra these subatomic particles are going to chant. And if you were to take an imaginary trip to the City of the Atom, you would hear this divine iteration as a wonderful melody as soon as you entered its heavens. If you knew which tune corresponds to which element, you would also be able to identify the city you had arrived at. Further, you would see points of light jumping like fire-works between heavens of different colors. All these lights and sounds are the unfathomable prayers and mantars of an atomic city, and the reflection of the "they give praise" (*yasbahun*) secret in our day to the scientific world.

This is the reason why the Koran holds the rational sciences, such as physics, astrophysics and biology, in such high esteem. If science observes existence from the honorable standpoint worthy of it, it will perceive the infinite meaning hidden therein. It will intuit the divine chant in the smaller and the smallest. Whether the technicians and supervisors realize it or not, the mantars of molecules are being observed today on the video display screens in NMR laboratories.

Let us now try to understand the great subtlety of the Koran, which informed us of the existence of these mantars 14 centuries ago, by reciting the verse in its entirety. At the

beginning of the verse, God delivers the first scientific message: "I am the Knower of the Unseen", to those in doubt about the Resurrection. Next, He reveals the existence in the divine computer of the scientific sources of atoms and subatomic particles. This verse forbids atheism to scientists: He who knows, cannot deny. How can a person who has summoned the music of these tiny spheres to the screen and observed them disbelieve? Under these circumstances, unbelief can only be the seal of ignorance.

Another point involved here is the information about the macrocosmos. Just as with the microcosmos, the computer of scientific records contains the Divine Ordinations for the macrocosmos, i.e. planets and galaxies. In other words, which planet is going to be in which corner of the universe at what instant is all recorded on the wondrous computer of the Guarded Tablet. The Resurrection, too, is stored in that memory. Why do you still have doubts?

I have not broached the subject of quarks in this discussion of elementary particles, since this is still a controversial matter among particle physicists. (Quarks are supposed to be the building blocks of protons and neutrons.) It is thus that physics goes from the smaller to the smallest in its ceaseless search for the meaning of the Koran's "lesser" (*asgar*) secret.

SECREST OF THE 'PROVIDER OF THE WORLD'
ATTRIBUTE



وَكَايِن مِّن دَابَّةٍ لَا تَحْمِلُ رِزْقَهَا ۗ اللَّهُ يَرْزُقُهَا

وَإِنَّا كُذِّبُوا ۖ وَهُوَ السَّمِيعُ الْعَلِيمُ ①

(العنكبوت ٢٩)

"How many are the creatures that carry not their own
Austenance ! It is God who feeds (both) Them and
You : He is the All-hearer and All-knower"—

Secrets of the 'Provider of the World' Attribute

Spider is one of the most difficult chapters in the Koran proclaiming the subtleties of God's name, "The Provider". The special message of this verse is that it declares how Divine Omnipotence reaches out to creatures unable to provide for themselves. There are many recent observations that vindicate this message. Before passing to these explanations, however, I would like to summarize an important aspect of God's "Provider" name as related to the biological sciences.

Everybody knows that there are hundreds of thousands of plant species on earth, and more than a million species of animals. These organisms have all been consuming food for millions of years in order to survive, and in many cases an organism feeds on another species. This subject, which may appear commonplace to many, has been examined in depth in recent years. The results that have been obtained are truly amazing.

One of the most significant proofs of God's inevitable existence is the subject of food chains among organisms. How, if organisms feed on each other, can so many creatures survive on earth? Why don't the strong and "the fittest" exterminate all the other species? Each organism con-

tinues its line and does not disappear no matter how weak it is. (Certain exceptions are the outcome of special biological circumstances, and have nothing to do with the food chain.)

Before going on to answer this question, I would like to remind you of a study performed on termites (an insect smaller than an ant but resembling it) in recent years.

Termites, like other insects spawn by laying eggs. A termite generally lays 1000-2000 eggs. Half of these can enter the struggle for survival. What is interesting is that one species of termite lays two million eggs at a time. Investigations have revealed that these eggs constitute a delicacy for all other insects, and that an insect always prefers to feast on the eggs of this termite. For this reason, God has endowed this termite with a special ability: it spawns in such quantity that 500-600 termites still survive from these two million eggs, thus continuing the species. The reason for the survival of species, in spite of the fact that God has created all organisms as subsistence for each other, is to be found in the phenomenon of this tiny termite.

God has imposed such a quantitative balance on organisms that no species can develop beyond the limits ordained by the Almighty. This very important law of biology was not discovered until the war on agricultural pests using chemicals. After the widespread use of the insecticide called DDT, it was found that the species and numbers of insects are so well-balanced ecologically that the destruction of one species resulted in the outbreak of a kind of strange and harmful spider, disrupting the entire equilibrium.

The records of the Guarded Tablet, which God frequently mentions in the Koran, have coded all organisms

with the precision of a computer. It is established in advance which creature is going to consume how much of which other creature. This computation, which boggles both the mind and the imagination, is a manifestation of God's attribute of "The Provider". All true biologists must be filled with admiration at this marvell. If — God forbid — Mother Nature had been wild, as those stuck in unbelief still think, this food regime would have been broken millions of years ago; the final survivors, the few remaining carnivores, would have devoured each other off and life on earth would have come to a premature end. This is why God constantly reminds polytheists and atheists of the meaning of the 'Provider' attribute in the Koran. This food chain on earth is biologically considered to be a fulcrum of faith: Too bad for atheistic biologists who still live in the past.

Some people unaccustomed to reflection regard the subsistence of organisms on one another in the food chain as a tragedy. But organic life is an appearance of the world of multiplicity. To be destroyed and to have an end is an immutable law of multiplicity. The transformation from molecule to molecule is a manifestation of divine art: In the laboratory of the soil, a dead butterfly is ceaselessly processed into a delicate rose.

As for the special message of the verse, the subtleties — in the sustenance of many organisms are enough to awe anyone for years. For example, the owl waits in its spot without moving anywhere and influences as sparrow landing in front of it by a special kind of radiation, thus capturing its prey effortlessly. A species of pelican, on the other hand, has no chance of catching fish without waiting motionless in swamps for six hours.

The message contained in the verse, however, goes beyond these phenomena. How do organisms unable to

sustain themselves obtain food? In recent years, a couple of wonderful discoveries have been made in this respect.✓

The first discovery was made by a biological research group in Alaska. It consists in the magnificent picture of a small worm trapped in ice with a morsel of greenery in its mouth. It is as if God Almighty has displayed a living example of the verse, nurturing vegetable life even in ice in order to feed a worm.

Our second example is enough to revolutionize the biological sciences.

Caves of lava are formed by the lava flowing down active volcanos. Since these caves are forged by lava at a temperature of 2000-3000 degrees Centigrade, there can be no question of the seeds of an organism remaining in the caves. A biological expedition investigating the possibility of new life formation in such caves discovered a snake-like organism in one of them. At first they thought it was a snake from the outside world, but were astonished when it emerged that far from having anything to do with snakes, this animal was a gaint worm, 1.5-2 meters in size. But the real surprise came when this creature was examined in the laboratory. For this giant worm was unlike any other known worm: It had neither a digestive nor a respiratory system. The only thing this organism had was a heart. How could it live, eat and breathe?

Investigations of the animal's skin solved the riddle. Various bacteria living on its skin provided the animal both with food and with oxygen. Once again, God was revealing the secrets of Chapter 29, Verse 60 in a biological laboratory.

The discovery of this 2-meter-long worm has also dis-

posed once and for all of all the sophistries of evolutionists. For this worm has developed neither from a unicellular amoeba nor any other kind of animal, since it was born in a cave scorched by the fire of volcanic lava. It was a wonder of biology both in terms of my Lord's attribute of 'Creator' and of his capacity as 'Provider'

Science has been given to man in order that he might comprehend the handiwork of the Divine. Thoughts to the contrary consist of the delusions of man's own imagination, and are, like the theory of evolution, condemned to extinction.

THE CALAMITIES THAT VISITED THE
NATIONS OF HOOD AND AD



وَأَمْطَرْنَا عَلَيْهِمْ مَطَرًا فَسَاءَ مَطَرُ مِنَ الْغَيْرِينَ ﴿٥٨﴾

(النمل، آيت ٥٨)

And We rained down a rain on (those who lagged behind); and evil indeed is the rain on those who have been warned.

The Calamities That Visited the Nations of Hood and Ad

Once upon a time — in early August 1945, to be precise — there were two islands, shining like emeralds in the middle of the ocean. The major cities on these islands were called Hiroshima and Nagasaki. Early in the morning in two different days, they would be the chosen victims of one great war. An act of destruction, of such magnitude that it would be discussed for the rest of mankind's days, lay in their destiny.

In those discussions, however, few people took notice of one very interesting point.

When the atomic bomb was dropped on Hiroshima and Nagasaki, an infernal heat enveloped the already sweltering cities. The survivors of the initial blast threw themselves in the streets, and then revelled under the rain produced by black clouds that suddenly appeared in the sky. But the real death was descending as radioactive krypton in the form of this rain. Many of the 200,000 who perished in these cities received the kiss of death from these raindrops.

Certainly we do not claim that these cities were visited by divine punishment. The secret of one of the verses in the Koran was, however, becoming manifest.

It has been explained by all commentators that Lot's nation was destroyed by a rain, and that this was not a flood. Until the advent of Hiroshima, such a 'death rain' was believed in only by the Faithful, while the unbelievers sneered on in contempt. This expression, however, was wiped off the faces of those who dared sneer at the verses of the Koran by the radioactive rain of Hiroshima and Nagasaki, a phenomenon which surprised even the scientists who built the atomic bomb.

I would, dear reader, like to emphasize one point here. When God decides to destroy a nation, He will, as the possessor of infinite power, of course send down His wrath in a form neither we nor our science can know. Consequently, we do not mean to imply that Lot's nation was destroyed by rain descending from a radioactive cloud. However, it is clear that all the verses of the Koran bear scientific implications. The rain pouring from the cloud of radioactive krypton is a death rain, comparable to the rain that annihilated Sodom and Gomorrah.

The idolaters of Lot's nation were pleased when they saw the clouds of death, thinking that relief was on the way. Indeed, Ibn Arabi, in explaining this point, submits an elegant interpretation: "Of course this death is relief for them, since their blasphemous condition will be terminated". The sacred verse has also indicated this point. Jalaluddin Rumi, too, says: "When death came near, the nation of Lot saw the truth and understood that the cloud of death was a relief for them". In the same way, the people of Hiroshima thought the death cloud was a saving grace.

It is explicitly proclaimed in the Koran that nations persisting in their blasphemy and rebellion are destroyed by divine wrath. Those who do not believe this are even enjoined to go and see the ruined land of those nations.

Among statements to this effect is the decree that many nations were destroyed by a single blast of sound. That this blast referred to the sound of a violent explosion is derived from its dictionary meaning.

In connection with this peal of sound, it is interesting to note the magnetic field fluctuations of large amplitude which have attracted the attention of science in recent years. If matter enters an intense magnetic field, it first vibrates naturally. If the field intensifies, the effect on the human brain can cause insanity and sudden death. This resonance, which may be compared to sonic waves of extreme intensity, acquires a lethal aspect.

The thought that the blast at the Resurrection may be such a lethal vibration arising from terrible magnetic fluctuations is enough to inspire admiration for the wisdom of the Koran in anyone who believes in science.

As is declared in Verse 6 of Chapter 69 (Absolute Reality), the nation of Ad was destroyed by a freezing wind. In terms of normal natural conditions, a freezing wind in the Middle East is not an ordinary phenomenon. What is this wind that froze the nation of Ad?

The answer to this question is again buried among the scientific facts related to magnetic variations. Heat, as everyone knows, is a quantized motion or vibration. This motion of molecules is the basic factor regardless of whether chemical processes, electrical heating, or the rays of the sun are involved. It used to be thought that heat was a separate kind of energy. In recent years, the view has gained acceptance that heat falls under the electromagnetic force category among the four fundamental forces of nature (i.e., the gravitational, electromagnetic, strong nuclear and weak nuclear forces). Indeed, as I shall explain

when interpreting the verses on Hell, the notion of rocks as Hell-fuel is quite in agreement with this novel scientific concept.

Magnetic effects in a region can increase or decrease this motion. It is conceivable, then, that the wind sent against the Ad nation was cooled by such magnetic means.

It used to be that certain primitive intellectuals who had never read the Koran, and solely on the basis of hearsay, would attempt to criticize the Koran claiming there was no mention of cold in it. But not only does the subject of cold occur in the Koran, but the term 'intense cold' (*zamharir*) of Abyssinian derivation is used.

The concepts related to divine wrath and Resurrection in the Koran yield unbelievable messages when probed from the standpoint of modern physics. We shall be inspecting these one by one in the future. Meanwhile, it is certain that serious messages are being imparted to modern man and to scientists in particular with the insights on the nations of Ad and Lot. The magnificence of Koranic definitions will continue to dazzle all eyes till the end of time, provided those eyes are not blind to begin with.



TOPIC 34.

MAN IS IN LOSS

●

إِنَّ الْإِنْسَانَ لِفِي خُسْرٍ ۝

(العنبر ۱۰۳)

Surely man is in (absolute) loss.

Man is in Loss

In this section, we shall attempt to explain another of the most wonderful among the Koran's miracles.

We understand from the collective meaning of the chapter that anyone who does not believe, does not behave righteously, and does not possess the virtues of patience and justice is in loss; is frustrated, wretched, miserable and in a fix.

Before explaining this magnificent decree of the Koran, I would like to summarize some very important observations of psychology and medical psychology, which try to explain information about the self (*nafs*). I have already dealt with this matter briefly in the topic on Prayer (Topic 22).

Under the influence of Freud, sexual passions were for many years accepted as the determining factor behind human behavior and morality. In the last 25 years, there has been unanimous acceptance that the most influential emotion in man is fear. Fear is so important in the human constitution that many biological disorders definitely arise from fear and its associated delusions.

This can be observed especially in the case of child-

birth. As everyone knows, urban women bear children with more difficulty than rural women and face various problems during childbirth. Medicine used to put this down to the fact that women in rural districts are more exercised.

In the last decade, it has been found that childbirth proceeds by a bilateral computerized order involving both the mother and the child. During childbirth, the mother and child are both guided by a computer center, like planes landing under automatic pilot. The error that disrupts this system the most is the emotion of fear. Since urban women are more timid than their rural counterparts, their delivery is more difficult and creates various kinds of trouble.

This example is enlightening in terms of one's daily life. If we do not view all the events that confront us with a certain measure of resignation, we are filled with an irresistible fear of the future. This emotion creates panic, and panic is the hidden cause of distress.

For the unbelieving person, there are two grave fears. The first of these is the fear of death and annihilation, and the second is the fear of the future. These two fears grip all men and fling them into the clutches of an unbearable fire. Various forms of psychological distress and material illness (stomach ulcers, cardiovascular spasm, paralysis and even cancer) are precipitated. On the other hand, they create a panic which wrecks morale, and the person boils relentlessly in a caldron of sufferings and pain.

What does a person subdued by the twin fears of death and the future do? He falls prey to either alcohol or narcotics (especially heroin), and either surrenders his ethics, to a hyena-like, interminable brutality, or wanders half-crazed in the nether regions of insanity.

The opposite of fear is the emotion of trust. This fee-

ling always develops in direct proportion to faith. The unbelieving person pursues counterfeit feelings of trust: For example, he tries to escape fear by going after money. Since the fact that he cannot trust anything of anyone is engraved in his subconscious, he is always in loss. The escape of the person devoid of trust into alcohol, heroin, insanity and brutality does not resolve the problem; rather, it exacerbates his loss. This is the basic reason underlying Islam's prohibition of alcohol. It is senseless for a believing, trusting person to seek consolation in alcohol, whereas the unbelieving person tries to drown the fire of his loss in drinking.

The second important emotion influencing human behavior is hatred or malice. Once this emotion is reflected onto the human being as greed, the fires of frustration are fanned. The reason for hatred and greed is the inability to achieve the grace of good behavior and sincere action. The miraculous insight contained in Verse 3 of the Chapter of Time in the command: *"Those who believe and behave righteously are not in loss"*, shed light on this fact 14 centuries ago. Therefore, he who does not believe is ruined by fear and he who does not behave rightly and does not have the morality of Faith is ruined by hate and passion.

One of the most significant scientific observations of recent years is the system that computerizes the emotional reactions in the human body. The relationship between the hypothalamic region, located below the brain, and the vegetative system has been known for 30 years. However, exactly how emotions reflect on man's material and moral constitution was not known in detail. In recent years, investigations have clarified the reflection mechanism of mental stress on the human body. We may summarize the results as follows:

The emotional and bodily constitution of man is regulated to a great extent by the hormone, or endocrine, system. Many vital activities, from the dilation of blood vessels to appetite, are under the control of the endocrine system. This system is composed of internal secretory glands that regulate many events, from the freshness and vigor of the skin to the immune system. These glands are in turn coordinated by the central authority of the pituitary gland, attached to the lower brain. The stem of this gland is covered by a special membrane together with the arteries arriving from the brain. This membrane covering the brain, assumes a diaphragm-like quality at the base of the pituitary. If it contracts it constricts the arteries, the flow of hormones secreted by the pituitary gland into body is reduced, and hormonal action is impaired. Impotence arising from excitement is the best example of this. If the membrane expands, on the other hand, the pituitary arteries are also dilated and hormones can flow more freely. The best example for this, in turn, is the recovery from illnesses through high spirits: As the pituitary delivers strong secretions, the protective secretion of the thymus gland is increased, and bodily resistance increases. Now this regulatory mechanism is managed by a nucleus in the hypothalamus, and this center is completely under the control of emotional influences. Research has shown that emotions such as hate, greed and fear inhibit the endocrine system by means of this center in the hypothalamus while the emotions of love and trust enable this center to operate the hormonal system more lucidly and efficiently.

Have you noticed the tremendous implications of this scientific observation?

Yes: God has adjusted the magnificent mechanism of the human body to operate in accordance with the laws of

faith and moral conduct. More explicitly, human biology is a marvelous computer system, and the basic law of this system's program is adjusted according to Faith and morality.

When man is filled with arising from unbelief and with hate and avarice based on fear, he begins to run his vital systems in reverse gear. This is the fact that Verse 2 of the Time Chapter informs us of. The Great Creator declares: "Human beings, I have programmed you so that you may have faith and be virtuous. If you act to the contrary, you are in loss." He has computerized the endocrine system, from the hypothalamus to the stem of the pituitary and the membrane-like circuits, in such a way that if we live with feelings of love and trust towards our Exalted Lord, these circuits operate healthily, blood vessels are dilated, the organs and tissues are well-supplied, the immune system operates at maximum efficiency and the nervous system exhibits a calm and happy appearance of full harmony.

Otherwise, if you are full of fears, anxieties, hate and avarice, woe to you! You are in loss; neither alcohol nor heroin, neither wild passions nor insanity can extricate you from the fix you are in.

Human biology vetoes the crises of unbelief. And the exalted Koran, the beauty of whose verses one cannot have enough of, has revealed this secret 14 centuries ago in a message that defies imagination: Unbelief is in loss, in a blind alley. Come to belief, to virtue (sincere deeds), to virtue and to patience!

"O man, you are in loss, you are writhing in a dead-end. The cure for this is faith, morality and truthful forbearance; that is, a certain measure of resignation."

If only nonattachment could be sold in drugstores, where people could rush in and buy it! But unfortunately this prescription can be filled only in the pharmacy of Islam.

Anyone who realizes that he is burning in the fires of frustration and is in a blind alley is going to run to this medicine sooner or later. How strange it is that some of us are in the pharmacy, yet seek for a cure alongside the rest.

TOPIC 35.

THE AXIS OF THE UNIVERSE,
TRANSFORMATION AND RECIPROCITY

●

وَالسَّمَاءِ ذَاتِ الرَّجْعِ ۝
(الطارق (٨٦) آيت ")

By the reciprocating heaven...

The Axis of the Universe, Transformation and Reciprocity

Tareq is one of the most difficult chapters to interpret in the Koran. As is declared in its 13th and 14th verses, the Koran is a decisive Divine Word that precludes forced interpretations by the incompetent. The statement "decisive word" occurring in Verse 13 bears special significance for the *Tareq* Chapter, each one of whose verses lends expression to profound scientific truths. Because of this, the earliest commentators deemed it proper to interpret each verse without recourse to the science of their age. This was the right course of action, but we find that this care was neglected in later centuries.

The first scientific message that the *Tareq* Chapter delivers is the word *Tareq* itself. There is no such definition as 'the *Tareq* star' in earlier times, but later interpreters assigned *Tareq* the meaning of various bright stars. In any case, Verses 2 and 3 of this chapter clearly indicate that no *Tareq* star was known at the time.

In the light of recent astrophysical findings, it is possible that *Tareq* refers to quasars. For a quasar emits hundreds of thousands of times more light than do galaxies. In another context, it represents the fixed spaces of the fifth

or sixth heavens. A quasar is a seedbed of galaxies, giving birth to a galaxy composed of billions of stars.

The reason for giving this scientific explanation is that we would like to approach the scientific message of Verse 11 more closely. For the reciprocity of the universe and *Tareq*, which may be a quasar, underlines a very significant astrophysical relationship.

Until the last 25 years very little was known about the heavens and the universe. Atheistic astrophysicists fancied that the universe was composed merely of gigantic nebulae distributed within the vastness of the cosmos. According to these scientists, planets of definite size circumambulated their suns, and when the energies of the latter were exhausted, they simply vanished into oblivion. The modern view of the cosmos emerged only after the discovery of quasars and black holes. I have already dealt with the latter at some length in Topic 2.

According to the information of astrophysics, four significant families of laws are known regarding the universe:

1. The reciprocity between the gravitational and centrifugal forces; i.e., the preservation of planets or other objects through rotational motion in the presence of an intense gravitational field. This reciprocal action is balanced in each instant by gravitation.

2. The reciprocity between black holes and quasars. The dying star is transformed into a gravitational singularity from which nothing can escape, and the matter and energy falling into it are instantly transported to another location in the universe where the black hole "wormholes" its way back into the cosmos as a white hole. White holes are

thought to provide the explanation for the truly vast energies of quasars, which in turn form new galaxies.

3. The magnetic potential or 'quantum field' that serves as the matrix for astrophysical phenomena.

4. The expansion of the universe from the center outwards starting from an unknown focus or axis.

I have explained these fundamental cosmic truths in the interpretations of various verses. I come now to the secrets of Verse 11 of the *Tareq* Chapter: *"(I swear) by the reciprocating heaven"*.

This verse emphasizes that there is a reciprocity in heaven. What could this reciprocity be?

Reciprocal action is the cyclic conversion of two related but opposite events in each other. To give some examples, the approach to and regression from a point, the recursion of an illness, the annihilation and creation of a creature, or the death and rebirth of an organism are all reciprocal events.

It is clear that the key to the reciprocity in the skies lies in the *Tareq*. Quasars do indeed represent such reciprocal action. In the depths of space, many stars are annihilated by black holes, while quasars produce new galaxies. This reciprocal action continues within a time period measurable by billions of years. This is why the sky reciprocates: Creation, various transformations and finally, destruction ceaselessly continue in the sky.

A less easily intelligible aspect of this reciprocity is the action of the expanding universe in the sky, that is, space. However, since science has not yet made any definite sta-

tement in this respect, we must defer any interpretation in terms of dimensions. Another interpretation, to the effect that God's Grace descends to earth while praises and thanks to God ascend to heaven, also lies beyond our scope.

Here, I would like to draw attention to an important point. In astrophysics, the terms 'cosmos' and 'space' are often used. In the Koran, on the other hand, the word 'heaven' is invariably used in connection with astrophysics. There is an important reason for this. Modern physics, since it always investigates the universe in the context of four dimensions and believes it to be composed of matter alone, regards all worlds in terms of the concept of the universe. The Koran, on the other hand, observes the worlds in infinite dimensions, where these worlds are the totality of systems whose backbone is formed by many other dimensions besides the four commonly known ones. Now the 'heavens', which we may also call 'sky' or 'space', are a spatial system of bands where magnetic forces are operative and the laws of physics and geometry hold. For this reason, and solely in order to distinguish this nuance, the term 'heaven' is used in all the verses of the Koran dealing with science. But the Koran also informs us of the worlds in all the splendor of their infinite dimensions right from its very first verse— *"Praise belongs to God, the Lord of the Worlds"*,

As I have already mentioned in earlier topic 21: , The heavens constitute a geometrical and physical system composed of seven magnetic bands. And indeed, the concept of Paradise has never been included within the system of heavens; on the contrary, it has been described as a world of separate dimensions. I shall return to this subject in the topic dealing with Paradise.

The concept of other worlds and other dimensions is truly difficult to understand. To provide a simple example, if we had lived inside an atom, we would have thought that space was restricted to its energy orbitals and that all extension was confined to this tiny world. How could we have comprehended a description of the sun? Or, in that world where we lived for millionths of a second, how could we have comprehended the days and years? The reciprocity between the heavens and the other dimensions, which we cannot explain as yet, is equally mysterious.

A new secret has been revealed to science: Time does not flow at the same rate in all places in the universe. We have discovered this fact through the recondite voyages of cosmic rays with frenetic oscillations. Although the lifetimes of these particles (pi mesons) last no longer than a hundred billionths of a second on earth, they can survive for many days in various regions of the universe due to the dilation of time. This is a marvel of a new order: The heavens possess reciprocity also in terms of the flow rate of time. Such are the profound truths of physics to which the declaration in the sacred verse concerning reciprocity lends expression.

Please inspect the difficulties we have encountered in interpreting this sacred verse by rereading this section, and observe how even the most advanced physics is overtaxed in trying to comprehend it. Some friends who read the present commentary in manuscript form asked me to simplify it and expand it further. It appeared more truthful to me, however, to view the specialist physics of the Koran in its natural grandeur; and neither I nor anyone else has the right to attenuate it.

THE SITUATION OF THOSE IN THE
HEAVENS AND ON EARTH AT THE
RESURRECTION

●

وَنُفِخَ فِي الصُّورِ فَصَعِقَ مَنْ فِي السَّمَوَاتِ وَمَنْ فِي
الْأَرْضِ إِلَّا مَنْ شَاءَ اللَّهُ ثُمَّ نُفِخَ فِيهِ أُخْرَى

فَإِذَا هُمْ قِيَامٌ يَنْظُرُونَ ﴿٦٨﴾ الزمره ٣٩

When the trumpet is blown, whoever is in the
heavens and on earth will drop dead, except such
as God wills. Then. When it is blown again, they
shall stand up, looking about.

The Situation of Those in the Heavens and on Earth at the Resurrection

As everyone knows, the Resurrection is an event destined for all mankind. An interesting aspect of the verse is the sentence declaring the death of those in the sky at the first Trumpet. All Moslems, and even all People of the Book, believe and know that those on earth will perish with the first Trumpet and be raised with the second. But who are the ones in the sky who will die and be reborn at the Resurrection? The reason I wish to interpret this verse is both in order to seek an answer to this question to the extent of my abilities, and to address the problem of "space beings" that has arisen in recent years and which represent a distortion, leading ultimately to the denial, of the contents of the Holy Books.

The first Trumpet at the Resurrection is given as *saiqa*. *Saiqa* is a powerful sonic blast that kills everything, and expresses a scientific truth which modern physics is also attempting to imitate: It is already known that sound waves of a certain frequency and intensity can kill organisms.

The Resurrection transforms the system of dimensions. For this reason, it is an act of Divine Omnipotence

that levels all ordinary space. We do not know, however, exactly when this aspect of the Resurrection will intervene. The Resurrection will begin when the angel Israfil blows the Trumpet. As the commentaries remain undecided on this subject, we have excluded it from this book dealing only with scientific subjects.

The second Trumpet is called *radifah*. This is a sonic frequency with a reanimating effect. Scientifically, the nature of the *radifah* Trumpet is obscure. The revivifying properties of certain sounds have yet to reach the attention of science.

The reanimation of creatures and particularly of man at the Resurrection is, without doubt, a divine miracle. However, there must also be some reason why this duty is entrusted to Israfil and his Trumpet. To give an example, it is known that certain tortoises develop their offspring by looking at their eggs: The rays emitted from their eyes cause growth and maturation. The key to our resurrection will be the sudden delivery of the secret of "the Living" to the truth of the spirit projected into the dead body by the sound waves of the second Trumpet called *radifah*.

It is clear that God Almighty will impart a special secret of existence to the dead body cells during some unknown time span between the First Trumpet and the Second Trumpet, and that the projected soul will completely reanimate the already prepared body at the Second Trumpet. Since the genetic codes of cells belonging to the dead body are already recorded on the 'tapes' of the Guarded Tablet, the preparation of the body for Resurrection and its liberation from decay can occur almost instantaneously. It is possible to observe what we have said above quite explicitly on the last page of the Ya Sin Chapter. God informs unbelievers of all the facts with the decree:

"Is not He, who created the heavens and the earth, able to create the like thereof? Of course He is; for He is the All-creator, the All-Knowing.

"His command, when He desires a thing, is to say to it 'Be', and it is. "So glory be to Him, in whose hand is the dominion of everything: And unto Him will you be returned."

Let us now return to our main subject. Who are the ones in the skies who will die at the end of the world and be raised at the Resurrection?

As I have just explained, death in this interval arrives by sonic vibrations at a time when space has not yet been dissolved. Angels are not among those who will die, for angels are beings of other spaces and additionally are charged with duties at the Resurrection. An important definition of the verse is "those in the heavens." If it had said only 'heaven', the near sky of the earth would have to be understood.

The place of jinn in this command is well-defined. One party of those in the skies who will perish are definitely the jinn. Since the Koran addresses both jinns and human beings, the jinn in the skies will certainly die, be resurrected, and called to account for their deeds.

That part of the meaning relating to human beings, however, quite clearly bears a miraculous secret revealed only in our time. Nobody knew when the Koran was revealed that man would someday fly in the skies and even in space. This, therefore, is another miraculous aspect of the verse. Had it not been for this decree, the atheists would have insolently dared to make fun of the Moslems, saying: "When doomsday comes, we shall all be in space."

The verse quite clearly foretells the conquest of the skies and of space close to the Resurrection and even in our time. Once again we behold the miraculous wisdom of every verse — even every word — of the Koran.

The Jinn

The concept of the jinn exists in all revealed religions, and even in confused and corrupted religions. The jinn are beings structured out of invisible energy. They are, however, conscious. Their vibratory speed, in excess of 300 000 km/sec, makes it impossible for them to be seen or sensed by a measuring device. In order to make an approach to this concept, it is enough to recall the properties of ordinary matter as an example.

All ordinary matter, and hence objects, are composed of elementary particles. These all have speeds below that of light. When these acquire geometrical motion with respect to each other in space, the appearance of various objects is obtained. However, such beings have low resistance to heat. Although a naked particle can withstand heat, the systems woven by these in space, i.e. material bodies, disintegrate and dissipate under intense heat. They lose all their structural properties and are reduced to their individual atoms at a mere 5000 degrees centigrade, which is next to nothing from a cosmic perspective. There are at least a hundred billion billion stars in the universe, and only in one in every million of these is the temperature less than tens of thousands, even millions, of degrees.

God has, no doubt, created many beings on or near these stars. But what kinds of characteristics should these creatures have in order to survive? The only rational answer to this question is that the most prevalent form of beings in the universe must possess an energetic, rather than mate-

rial and tangible, structure. In other words, they are systems composed of units of energy or quanta, systems formed by energies inherently resistant to fierce temperatures. It is quite reasonable to expect that among these systems, there should also be sentient and intelligent beings.

The interpretations of various verses in the Koran reveal that there are beings in the heavens also. These are most probably those servants of God that fall under the category of jinn. The sacred verses further reveal that the beings in the heavens worship God and iterate (*dhikr*) His name.

Since science accepts that almost all the stars in the universe are centers of extremely intense heat, it is obvious that these are going to be inhabited by different systems composed of energy units or quanta, that is, jinn. Even atheists today claim that the universe must be occupied by extraterrestrial life forms. What is most significant here, however, is the fact that these beings will not be of humanoid form. Certainly there are a few planets in the universe where material life forms can find the possibility of survival, but the important point is that by and large, nonmaterial beings composed of energy units will predominate in the universe as a whole. The distances in the universe are so vast that only such purely energetic beings have the chance of travelling from one star or planet to another.

Our purpose is not to start a debate on intelligent life in the universe. What does emerge from the above discussion is three points, all of which are extremely important for believers.

1. The jinn exist and, in accordance with the basic structure of life in the universe, are the most prevalent form

of living beings. A majority of the creatures in the heavens are comprised of these nonmaterial and energetic beings.

2. The existence of man or any being resembling man in space is next to impossible. Even if the existence of a planet in another galaxy approximating the conditions on earth were granted, it is not permissible to invent flying saucer tales in cases where distances of billions of light-years are involved. These tales are the fabrications of atheists that aim at destroying belief in sacred books, supplanting the theory of evolution whose bubble has just burst.

3. One concept involved in the decree: *"Whoever is in the heavens and on earth will perish"* in the sacred verse beings interpreted is the jinn, or beings of pure energy.

The sacred verse, therefore, supplies two miraculous definitions:

1. That human beings will conquer space in the years close to the Resurrection.

2. That the sentient beings composed of energy in the heavens are, in one sense, the jinn.

Angels, however, are different from these beings of energy. It is necessary to conceive of angels as beings existing in the fifth and sixth dimensions: They exist in other dimensions, but can be suddenly projected onto the material space of the universe, I have already alluded to this subject in the discussion on tachyons (— (Topic 19)—).

Both the subjects of angels and jinn are, however, a little out of season for present-day science. I hope to be able to provide a more detailed explanation in the years to come.

TRANSFORMATIONS OF LIFE AND
DEATH

●

يُخْرِجُ الْحَيَّ مِنَ الْمَيِّتِ وَيُخْرِجُ الْمَيِّتَ مِنَ الْحَيِّ
وَيُحْيِي الْأَرْضَ بَعْدَ مَوْتِهَا ۚ وَكَذَٰلِكَ تُخْرَجُونَ ﴿١١﴾

الروم ٢٠

He brings forth the living from the dead,
and brings forth the dead from the living;
and He revives the earth after it is dead;
even so shall you be brought forth.

Transformations of Life and Death

Although there are several other verses in the Koran that resemble this sacred verse, we shall interpret this one, since it bears very important scientific messages for those who do not believe in life after death. It will be noted that the sacred verse begins with: *"He brings forth the living from the dead."* If it began with the immediately following subsentence, one would be reminded of an ordinary biological phenomenon.

Most of the interpreters have assigned a metaphorical meaning to this verse, attempting to approach the verse by comparing unbelief to death and faith to life. Needless to say, these are respectable views. However, the comparison of these events to the Resurrection in the last part of the verse clearly implies that the first meaning has a scientific, biological aspect.

Let us list a few biological phenomena where the living emerges from the dead:

1. Some organisms die at the moment of delivery. This is the inevitable fate of these species.

a) Eels live in river deltas, i.e. the regions where the river runs into the sea. One species of eel travels to its spawning ground in the Gulf of Mexico, and dies before its

young are born. It is as if its offspring are born from the dead. The really staggering point is that these young then travel to a delta in the Mediterranean where their mothers came from and settle there, The distances involved are on the order of ten thousand kilometers. This unfathomable divine tale has been discovered in recent years, inspiring faith in all biologists possessed of minds.

b) Some species of spiders and butterflies die a few seconds before laying their eggs. In certain kinds of spiders, the female kills the male during copulation, and the semen of the male spider flows into the female after it has died.

c) In human beings, babies have been delivered up to 24 hours after the death of the mother. As for live childbirth a few hours after the mother had died, there are innumerable instances of such cases.

2. Those who return from the dead: In the last decade, very interesting and serious scientific research has been conducted in the United States on thousands of people who were pronounced clinically dead, yet subsequently returned to life. A short summary of these researches, considered to be evidence for the existence of the soul, are presented below

Separate studies have been conducted at various universities in the United States. Psychiatrist Raymond Moody has recorded the experiences of 95 individuals during the intermediate period between their death and their restoration to life. The stories of individuals from various parts of the USA during the period when no heartbeat could be recorded was always the same: A radiant immortality in infinite space. The researches of Prof. Kenneth Ring of the University of Connecticut have yielded similar results. Some scientist have suggested that these results arise from the

Christian background of the subjects. When Carlis ois reached trhe same conclusion on the basis of his researches in Vietnam and India, the results were published in respectable scientific publications. Dr.Fred Schoonis monitored the ECGs (electrocardiograms) of such cases, and determined the instants of death and return to life from the instrument recordings. It was found that at the instants when the patients recalled that they had not died, their heartbeats had ceased.

Surely there is an ordained message in all this, where God wishes to remind men of the existence of the soul.

3. One of the most significant meanings deriving from the sacred verse is, without a doubt, the emergence of organisms from the dead earth, I have already explained these insights earlier. To refresh our memories, the emergence of life based on DNA molecules is truly a miracle of the divine. The phenomenon which confounds even the most confirmed atheist today is the constitution of the first living DNA from the earth, that is how the first living organism arose from nonliving soil.

The rebirth of an insect or butterfly as a rose after it has fallen to the ground is, again, a secret of *"bringing forth the living from the dead."* This decree of the verse is a true miracle for those who have studied biology. A dying organism donates all its molecules to the laboratory of the soil, and the divine secret of *"the Living"* substitutes a rose or fruit in its stead. In fact, the meaning of the second clause of the verse is also contained here: An organism breaks down the molecules of life in its body, and releases these dead structures into the air in the form of carbon dioxide. This is, in a sense, the emergence of the dead from the living. We shall return to this point later on.

The worm living in the lava cave we gave as an example while listing the wonders of the "Provider" attribute (Topic 32) bears the secret of *"bringing forth the living from the dead"* in all its aspects. Even though there can be no organic remnants in a cave forged at above 3000 degrees, unprecedented worms measuring 1.5-2 meters in length are formed in it. The emergence of life from water is itself an important example of bringing forth the living from the dead.

4. The frequent declarations of God Almighty in the verses of the Koran that *"We bring forth the living from the dead"* embody science's grave reply to atheists. For atheists always claim that "Life emerges from life." The above examples demonstrate how mistaken they are.

Here I would like to underline an important point. The genetic codes representing each organism in all its details are in a sense static, even lifeless, as long as they do not receive the command to activate. Indeed; many microbes and viruses assume a lifeless, dead form like a frozen crystal when they cannot find water for their spores and inner structures respectively. In human beings, a similar situation is observed: Although each cell — for example, an epidermal cell — possesses the genetic code of an entire human being, these cells can never yield a human being since all but a part of the code is suppressed. In a sense, they are like the static writing in a book. On the other hand, the recurrence of life in the spores of microbes and in crystallized viruses is precisely the emergence of the living from the dead.

The same genetic message has been delivered to us in the creation of Eve. Many people cannot fathom why Eve was created from Adam's rib. If God had willed, He could

have created Eve from clay in an instant, just like Adam. Why did He create her from Adam's rib?

We know from modern biology that the only reproducible cells in the human body are those of the bone marrow. Today, these cells can be removed from the bone marrow and reproduced in the laboratory. However, these cells in turn yield only new bone marrow cells. But if their entire code could be deciphered, the fate of a man could then be inscribed. The creation of Eve from a rib bone informs us of this profound secret of biology. Hence, one secret of the decree *"We bring forth the living from the dead"* is the creation of Adam from clay and Eve from his rib.

As for the secret of bringing forth the dead from the living, the first thing that comes to mind is the mortality of living beings. We know from biology that the DNA molecules are tiny units that represent vitality and can replicate and survive indefinitely. Their transformation into death, i.e. finitude, is an act of the Divine Will.

Another meaning relates to the human body. After having been created, the human body, or in other words Adam, has a fate in Paradise that is not circumscribed by the normal life span. Contrary to widespread belief, in other words, the human body possesses the secret of immortality. A life span was designated for Adam and human beings only after the command: *"Undress and descend"* was issued. In other words, mortality, or death, emerged from immortality or life. This is the important insight proclaimed in this part of the verse to those who do not believe in the Resurrection and eternal life.

Vitality is a manifestation of God's attribute of "the Living", and its essence is continuity. The evocation of death from it is the mystery of the decree of Divine Omni-

potence. Many inexplicable cases of death in healthy human beings — while many sick persons who have lost most of their vital functions continue to survive — is another example of *"bringing forth the dead from the living."* Yet another is the ingestion of organic molecules by man, and his exhalation of these in the form of carbon dioxide.

As I have explained on the subject of vitality among earlier topics, carbon and nitrogen are 'alive' when charged negatively and 'dead' when charged positively. These two atoms change sign continually throughout the lives of all organisms. We are reminded of the preparation of this activity in the laboratory of the soil (*"giving life to a dead earth"*), and in the light of such examples, are informed that the Resurrection will easily come to pass at the instance of Divine Omniscience.

To insist on denying the Resurrection and rebirth in spite of all the examples of this verse is the result of ignorance as regards the basic facts of biology. The principles related to vitality and death in this subject may be supplemented by reading the topic 10 and the topic 13—
True science is always a divine insight that introduces a living faith into hearts that are dead.

THE INCREDIBLE COMPUTERIZED
BALANCE OF THE EARTH

●

وَالْأَرْضَ مَدَدْنَاهَا وَالْقَيْنَا فِيهَا رَوَاسِيَ وَأَوَّثَقْنَا

فِيهَا مِنْ كُلِّ شَيْءٍ مَّوْزُونٍ ۝۱۹ المجرة آية ۱۹

We have spread out and ordered the earth, set
upon it mountains, firm and immovable; and
produced therein all kinds of things in
harmonious balance.

The Incredible Computerized Balance of the Earth

It is difficult at first reading to divine the great scientific message imparted by the verse. This sacred verse lends particular expression to facts which descend like a sledgehammer on the brains of present-day atheists. Faced with the facts of science which the verse delivers, it is difficult to conceive the humiliation experienced by those who view the earth as no more than an accident in the universe.

We have already investigated the chain of divine wonders in the structure of the earth in our first book. The 23.5 degrees inclination of its axis is a matter for such delicate computation that it is possible for neither physics nor philosophy to calculate it. For example, if the earth were inclined 25 degrees, the Polar caps would melt in a few hundred years, and the oceans would be flooded with ice. If the slant was 22 degrees, on the other hand, Arctic ice would invade the whole of Europe, and life would be possible only in the equatorial regions of the earth. God Almighty emphasizes this important insight at the beginning of the verse in the definition of spreading out and ordering.

Again, this spreading out and ordering of the earth is closely related to its rotation on its axis every 24 hours. If the earth had completed one revolution every 30 hours,

such tremendous winds would have ensued that the earth would have become a hurricane-ridden desert for living things. If, on the contrary, the earth had rotated every 20 hours, most plants would have been unable to complete their biological activity and fallen victim to droughts.

The *“spreading out and ordering”* mentioned in the first part of the sacred verse, then, is obtained for the rotation of the earth by the harmonious inclination of the earth’s axis. This is an incomparable result that if left to chance could be achieved, in the words of a famous priest-professor, only after millions of trials.

God’s presentation in various places of the Koran of His marvels of order and measure aims at closing all doors to unbelief upon being confronted with the mathematical and physical order of the earth and the universe.

The most significant message of the sacred verse is the proper balance of things produced from the earth. What are these things, and what are these harmonious measures?

The scientific research to date links the chain of life to the balanced interactions between plants, animals and bacteria. The bacteria are charged with transferring nitrogen from animals to plants. Plants produce the oxygen needed by animals and other organisms, and animals supply both carbon dioxide and — through bacteria — nitrogen to plants.

While the chain of life proceeds in this manner, it is imperative that the oxygen in the air remain close to 20%. This is where the most delicate of subtleties begins. All smoke and exhalations are converted by plants into oxygen. One would need a computer to calculate the ratio of plant species needed to maintain the oxygen in the air at 20%.

There has to be a divine computer that can regulate the amount of plants needed for the smoke from chimneys and the oxygen consumption of humans and can provide the necessary oxygen to the air. This incredible calculation can only be considered as a divine miracle. The sacred verse declares: *"The things produced in the earth are subject to proper balance"* across a gulf of 14 centuries, at a time when none of the above facts were known.

Millions of years ago, a vast blanket of flora covered the earth. The purpose of this was to increase the oxygen balance of the atmosphere. Dinosaurs, the animals befitting these plants, roamed on earth. Finally, the oxygen ratio began to exceed 20%. The consumption of the plants by dinosaurs and their exhalation of carbon dioxide was no longer able to check the gigantic production of oxygen by the plants.

At this point, a vast geological upheaval occurred, and both the flora and the dinosaurs vanished from the face of the earth (see earlier Topic 4). Then, God produced all fish, birds and mammals at the same time. (The ridiculous views of the evolutionists have been superseded, and this is the latest valid hypothesis according to Duane Gish.)

As the sacred verse declares, the amount of plants is in such harmonious balance that a tree has been assigned to purify the fumes of every smoking chimney. Man — including those who think they believe — is in such heedlessness that he can never fathom these delicate calculations of Divine Omniscience, and for this reason cannot intuit the secret of "Provider of the worlds." The respect accorded in Islam to trees and the importance assigned to planting new trees stand in recognition of the above facts.

Let me now provide some further incredible calculations.

For nearly every illness, The Great Creator has fashioned a plant or microbe as a cure. How dare ignorant tongues bereft of evidence call this system a coincidence! — To create the earth, to settle human beings there, and then to keep ready all the botanical and bacterial remedies for all their ailments in the laboratories of nature!

Let me divulge another fact that will make them turn blue: There are exactly enough foxglove plants in the world to provide digitalis to cure all heart patients. There are also enough hashish plants to ease the sufferings of all the painfully ill, yet the medicine of that plant becomes black-market stuff under the pressure of heedless selfishness, and is used to provide pleasures for the lunatic fringe.

Another example of the things produced in harmonious balance in the earth: Until about a hundred years ago, firewood met the heating and energy requirements of men. If coal and oil had not been discovered, the forests would all have been the last of their kind on earth. But just at that moment, the divine computer delivered the coal and later, the oil that it had prepared millions of years ago, and in such measure as to provide enough for all human beings. Unfortunately man, the prisoner of egotism, is now preparing for the greatest war in history with oil as the center of the controversy. And what of the House of Islam? Because it has not truly embraced the Koran, because it has been unable to understand it and to realize new scientific advances, it now stands dazed, looking in bewilderment at even the wealth gushing from its own backyard.

Let us now look at the proper balance of the earth's constitution in terms of its metals.

We do not know the proportions of metals in the central core of the earth and the liquid mantle surrounding it.

But in the crust on which we live, the elements are distributed in such proportion that it is as if a scientific committee has provided a shopping list and the orders have arrived from an infinitely powerful factory. Each substance is present in the earth's crust to the exact proportion that the level of civilization ordained by God demands. Compounds of silicon, iron and potassium are the basic substances for residential construction. If even one of these had been missing, we would have been witnesses to the twilight of cities.

Until yesterday we didn't know what a blessing water is. Today we know that the calcium bicarbonate in water is the best organizer of digestion. Vital substances such as salt are distributed over the earth in such proportion that man has almost arrived in a fully equipped biological laboratory.

Have you ever considered that seawater has been evaporating, and then returning to the seas by rivers, for millions of years? During this process, new substances are transported to the seas from land, and yet the composition of seawater never changes. Observe the magnificence of this miracle of the divine computer: Millions of events take place, yet the harmonious balance imposed by God on the earth's produce does not change. For the Guarded Tablet is also, in a sense, a law of the Koran.

Returning to metals, there are metals whose names have been heard of only in the last 150 years, such as beryllium, uranium, cadmium, tungsten, tantalum and gallium. When these were first discovered, everyone regarded them merely as laboratory curiosities. Only later was it realized that these are the indispensable building blocks of advanced technology. From the utilization of atomic energy to high-temperature technological activities, each one of these metals represents some essential property, and their pre-

sence on earth is adjusted according to the part they are destined to play.

One of the greatest wonders of the planet earth, which God Almighty furnished before lowering man upon it, are the radioactive substances of the world. These are present in the earth's crust in such perfect proportion that its measure could not be ordered by any scientific committee. On the one hand, uranium-235 to provide nuclear power, safe in its natural setting yet dangerous when purified; on the other hand, carbon-14 to provide biological activity. What is really wonderful is mineral springs: These waters, which bear moderate amounts of radioactive substances, dispense health to millions of people all over the world.

Consider what we have said about the radioactivity of the earth from the reverse point of view. If uranium had been present in the earth in the form of its uranium-235 isotope exclusively, the world would have become a witch's caldron a short time after it was formed. On the other hand, if uranium-235 had not been present in uranium-238 in the proportion of 0.7%, we could not have obtained atomic energy. God has invested uranium-235 with such a characteristic that it can be converted to nuclear power only when it is separated, and does not pose a danger in its natural matrix of uranium-238.

Many biological events would not take place, but for the presence of carbon-14 in the atmosphere. If this substance, which has a proportion of one ppm (parts per million), had been slightly more common, it would have constituted a lethal hazard. And if the sodium-24 isotope were present in mineral springs, taking a bath would have been equivalent to being present at Hiroshima when they dropped the Bomb. Although the main substance in mineral

springs is sodium, its isotopes other than sodium-24 are predominant.

Yes, dear reader; you may rest assured that we could not exhaust the commentary on this verse if we were to fill volumes, so I have been content to provide a short summary. Let us frequently reread this breath-taking verse, which spells disaster for atheists, and think of its wonder: *"We have given the produce of the earth in harmonious balance and proper proportion."*

TOPIC 39.

THE INFINITE BEAUTY OF GOD'S CREATIVE CHOICES (SHAN)

●

يَسْأَلُهُ مَنْ فِي السَّمَوَاتِ وَالْأَرْضِ كُلَّ يَوْمٍ هُوَ

فِي شَأْنٍ ۖ (٢٩) الرَّحْمَنُ

Every creature in the heavens and on earth appeals to Him for its needs. Every moment He is upon a new manifestation (He disposes everything at every instant through his Omnipotence).

The Infinite Beauty of God's Creative Choices (Shan)

'The Compassionate' is a chapter that yields great revelations about God's secrets of creation. The present verse discloses secrets of great significance about the manner in which the Divine Disposal and Omnipotence are manifested. It also sheds light on certain events which are scientifically inexplicable. In order to gain access to the meaning of the verse, we must begin by considering the edict: "They request from Him, seek of Him and appeal to Him for all their needs" in the first sentence. Let us inspect this matter from the standpoint of various branches of science.

The nucleus of an atom is in an extremely delicate balance. Its unbelievable energies have been locked into the nucleus by Divine Omniscience. What will be the outcome if a disruptive perturbation is intentionally and physically introduced to such a nucleus from the outside? We know from the Uncertainty Principle of the famed quantum physicist, Heisenberg that it is not possible to predict individual physical events that will occur in a nucleus. What will happen if a neutron with the ability to alter the nuclear balance enters the nucleus?

If Divine Omnipotence did not exist, as the poor atheists tend to believe, the nuclear equilibrium would be disturbed, if slowly, beyond repair since the fresh neutron entering the nucleus has altered its balance, and the energy trapped in the nucleus would explode like a bomb. Indeed, God has created the uranium-235 nucleus in order to awaken us to this possibility, and has hidden that isotope in the uranium occurring naturally. If a neutron enters such a nucleus, you have an atomic bomb. Even this disintegration is not a total annihilation, but a limited and balanced fission.

This is what should happen when an atomic nucleus is bombarded by a neutron. But normally, such an energetic fission reaction does not occur. As for the reconstitution of the balance, it could not be achieved by a scientific committee laboring for hundreds of years.

What happens, in that case?

The nucleus appeals to its great Lord, and God donates the nucleus Knowledge from His infinite splendor manifesting at each instant. With incalculable skill, the nucleus transforms the neutron into a proton. The nucleus is transmuted into another element, and the balance is restored. And how long do you think this process takes? Ten millionths of a second.

Let us pass to a second example. Twenty years ago, astronomers detected that two very distant galaxies were approaching each other the two stellar systems, each composed of billions of stars, were about to collide, and all hell was about to break loose. The equilibrium based on the gravitational and centrifugal forces of billions of stars cannot tolerate the addition of even one sun, let alone such a collision. The billions of stars maintain their existence at

various distances to each other and by rotating at definite speeds. The impact would destroy all their balances.

None of the expected events happened, however. The two galaxies merely passed through each other and continued on their ways unharmed. How did this rational miracle happen?

Verse 29 of the 'Compassionate' Chapter answers this question in advance: *"Those in the heavens always appeal to Me and ask of Me."* the galaxies, therefore, sent out a silent call for help To their Almighty Lord. God, in turn, allowed the two galaxies to pass through each other by the incomprehensible manifestation of His infinite potency and science, endowing them with incalculable balances.

Even this single incomprehensible event is enough in itself to demonstrate God's Omnipotence and the manifestation of His Splendor at each instant.

I shall now relate a biological phenomenon, in the explanation of which all sciences are foredoomed to failure.

The embryo completing its first three weeks in the mother's womb represents a surface resembling a fly's wing. It does not have a three-dimensional existence, being composed of adjacent cells, Cells of the endoderm and ectoderm are placed side by side in sequence. Again, the various cells that will secrete hormones in the future are placed in similar sequence, and so are the future muscle, nerve and bone cells. How are these cell sequences —the total of which does not exceed the size of a fly's wing— going to come together? The four basic cells that will form the stomach, for instance, are located in four different regions of those sequences. One of these will reproduce to

form the gastric muscle, the second the stomach's nerves, the third the secretory tissue and the last, its inner lining.

If the stomach were the only problem, perhaps the combination of these cells would fall within the bounds of possibility. But we have to consider that all the organs are in a similar situation. The liver, the heart, the kidneys and all the other organs will attain the possibility of life by the convergence of their own cells. What can be done on this leaf of cells the size of a fly's wing in order that each organ may find the three or four basic cells composing its tissues?

It used to be believed that this convergence occurred by the folding of the cells. Later research, however, revealed that this would be impossible for all organs simultaneously. Further, science investigated the formation of the embryo in the womb, and was astounded to observe a magnificent phenomenon: Starting from this leaflike form—i.e. the tissue phase, the embryo performs a rotation on itself and this rotation is of such a nature that each cell finds its companions and pinpoints the locations of the organs. The rotation and folding process progresses within an incomprehensible calculation of angles and rotational velocities, and the cells in different sequences of the same organ converge without the slightest error. How does this miraculous rotation and folding take place?

The sacred verse replies: *"Every being in the heavens and the earth seeks of Him (i.e., God), and He manifests each instant with Omniscience and Omnipotence."*

Yes: That tiny tissue in the form of a leaf requests the aid of God, in effect saying: How am I going to join the cells to produce the organs?" And the divine *shan* imparts such a rotation and folding to that tissue surface that all the cells

find their proper places in the future organs. During this rotation and folding an error of one micron would place the acid-secreting cell of the stomach in the eye, and the baby would be born blind.

Within the majestic wisdom of this verse, billions of events continue without error each instant within the secret of the divine *shan*. Thus, Divine Omniscience is in action at every moment.

A further scientific insight is concealed in the secret of "*manifestation of a shan at every instant*," This insight is rather difficult to describe. It means that in a sense, different manifestations and disposals are valid under conditions that change every moment at every point in the universe.

Both the expansion of the universe and the motions of single galaxies and galaxy clusters yield different conditions every instant. That is, a star or planet at a certain location in the universe is not subject to fixed and immutable physical conditions as was previously thought. The magnetic and geometrical configurations influencing it change each instant. Now Divine Omniscience and Disposal operate as a different *shan* manifestation according to these constantly varying conditions. There are, for example, a category of cosmic rays called pi mesons which have lifetimes of a million-billionths of a second. The divine *shan* arranges the lifetimes of these particles in those infinitesimal time spans, dilating the flow rate of time and increasing their longevity where necessary. Physics has measured the actual and virtual lifetimes of pimesons. Hence, there is a power, science and disposal that changes and is renewed every instant in the divine manifestation of *shan*. From the short lifetimes of pi mesons, on the other hand, we also discover

that the 'instant' mentioned in the sacred verse does not necessarily imply seconds, but is valid for periods lasting even million-billionths of a second.

The concept of a manifestation that changes every instant, introduced by this sacred verse of the 'Compassionate' Chapter, is concealed in the word *shan*. For the concept of *shan*, which fulfills the needs of all beings, has to be understood in this way.

A cell of the human liver, when we give it an entirely new, unheard-of chemical substance, instantly converts it into a harmless compound. Where is the handbook of chemical antidotes that teaches the liver cell what to do? Where is the encyclopedia that teaches it how to neutralize a chemical compound it has never seen before? How does it solve the problem?

It asks and implores the Divine Omnipotence, and the divine *shan* teaches it the required chemistry.

Here is how a basic law of science is contained in the Chapter of the Compassionate. He who does not know this, he who cannot comprehend this, observes the universe without eyes.

THE SECRETS BORNE ON THE WIND

●

وَتَصْرِيفِ الرِّيحِ آيَاتٌ لِّقَوْمٍ يَعْقِلُونَ ٥

In the changing (directions) of the winds are
(scientific) signs for a people who are wise.

The Secrets Borne on the Wind

Many of the scientific facts concealed in the verses of the Koran are often taken to be ordinary messages. This is a product and measure of our ignorance. Especially if a verse bears the hint: *"There are many signs for the wise and those possessed of minds"*, one can be sure that that verse shelters extremely important facts of science. Since the present verse contains such a message, it too must fall under the same category.

Let us first see how winds are formed. The simple definition known to everyone today is that convection currents due to centers with differing temperatures arise in the air. This is a very coarse view, and one that oversimplifies everything. We know that winds coming from all directions reach every point on the globe. Even the purification of our polluted cities is dependent on these moderate winds. This is a vast system of winds that carry clouds to millions of population centers, clear the air, melt snow and freeze when necessary. How must these warm and cool temperature centers, or rather frontal systems, be formed in order to carry the boon of life to the millions of population centers mentioned above?

Unbelievers pretend not to notice the wonderful pattern of winds, and wish to present it simply as a system

composed of warm and cool wind fronts. God defeats this desire of theirs with a miraculous command from the Koran.

For those who reflect, there are many signs in the differing directions of winds. In order to appreciate the subject of winds, let us first approach it from the reverse side.

a) What would have happened if the earth had been an ordinary planet, with its axis perpendicular to its orbital plane? There would have been no winds other than irresistible storms blowing from the poles to the equator and back again. This is what would occur if the earth were a planet positioned vertically like a pumpkin. God, however, created the earth with an inclination of 23.5 degrees. In this manner, the cooling of the North and South Poles and solar effects became different for every day of the year. Thus, the velocities of the winds were tempered: As the temperature differences between the equator and each pole lessened, the winds began to blow more moderately.

b) Since the thickness of the atmosphere at the Poles and over the equator was also different, separate air flows began in the upper and lower layers of the atmosphere. The warm and cool frontal systems thus formed new, more numerous centers, and the winds received the ability to blow not in a single direction, but in many.

c) How must the earth's crust be sculpted —with motifs of mountains, plains and plateaux — in order that all the population centers of the world may receive winds from every direction, and warm and cool frontal systems be formed reciprocally in the vicinity of each center?

To put it another way, suppose the earth has just been created. You assemble thousands of scientists and a similar number of computers, and tell them to create such a pat-

tern of mountains, plains and plateaux that warm and cool frontal systems must form near every nexus on earth; that is, each population center must receive wind from all directions. This conglomeration of scientists would not be able to set a single mountain range in proper place if it were to labor for thousand years. But God has embroidered such a system of mountains, etc., as a motif on the face of earth that different frontal systems arise on each day of the year, and winds blow from all directions. Hence, to those "What is the wind but a confrontation of hot and cool air, a very ordinary physical event?" the verse replies: "You do not reflect, you have learned nothing from science."

d) The adventure of the winds does not end there. God has endowed the atmosphere with two important properties so that the temperature difference between warm and cool centers does not increase and the winds do not become unbearable. The first of these is the ozone layer, which absorbs the extra solar heat and checks excessive temperatures. The second property is the 'blanket' effect of carbon dioxide in the air that prevents the earth from cooling, especially at night. All these marvels of science combine to bring winds to residential areas. If this equilibrium-restoring system did not exist, the storms that alarm us would be a breeze compared to the winds that would occur. As a matter of fact, one reason for typhoons and hurricanes is to show us what winds are really like. If man knew how delicate the calculations behind a slight, cooling draft are as he sips his tea on a sweltering day, he would stand right up and prostrate himself immediately.

There are many subtle reasons why winds blow from various directions. The cool and warm air they transport are first and foremost a preparation for rain. Sometimes, winds become strong and drag ions from the air; thus, the elec-

trical energies that are the basis of life are transported from the air to earth via the rain, where each water droplet becomes a life-given charged with electricity. The transport of plant seeds by the wind, and even insemination by pollen, are among matters treated in the Koran.

One very important aspect of winds is that they bring oxygen and fresh air to cities, and carry the polluted air in urban regions to forest areas for purification. The air that appears dirty to us is, in part, a source of nutrition for trees. Oxygen is also maintained at a constant level all over the world in this way. All these marvelous processes have been loaded on the automatic computer of Divine Omniscience, and continue without fail.

Yes, dear reader, you may rest assured: Which wind is going to form in what region, which wind is going to blow at which town at what hour between now and doomsday, is all coded on this computer of Divine Omniscience. *This* is science. To maintain the opposite, to claim that clouds are merely water vapor and that winds are nothing but air flow, is a disgrace in the name of rational science. This is the fact underlined in the last sentence of the verse: *"There are signs for those possessed of minds."*

Another great subtlety of the verse is that there are portents in the ability of winds to blow from various directions in all regions. As I have explained, the secret of multidirectional winds comes to pass only as the result of many physical profundities (signs).

Yes: With each wind that blows, our Exalted Lord expects infinite thanks and praise.

THE BIG BANG THEORY

●

قُلْ أَعُوذُ بِرَبِّ الْفَلَقِ ①

مِنْ شَرِّ مَا خَلَقَ ②

الفلق ۱۱۳

Say: "I take refuge with the Lord of falaq,
from the evil of all He has created."

The Big Bang Theory

These two verses, whose meaning we may not fathom even if we recite them every day, deliver the most recent discoveries regarding the creation of the universe 14 centuries in advance. As a whole, the chapter bears very important messages about human beings and creatures. But the most interesting message in terms of physics and biology is contained in the first verse..

As everyone knows, the word *falaq* is the key word in the interpretation of these two verse. I have earlier had occasion to point out that the words selected by God Almighty in the verses are exceedingly important. In commanding us to "seek refuge with Him from the evil of created things", God uses a special composition from among His attributes: "The Lord of *falaq*."

As will be better appreciated upon further clarification, the concept "Lord of *falaq*" must be a divine attribute that sheds light on all created things. In other words, the "Lord of *falaq*" concept must bear an inner meaning that gives expression to truths about Creation. This is indeed the case. This secret is, of course, hidden in the meaning of the word *falaq*, and in the essence of the attribute of Lordship.

What is *falaq*?

Etymologically, the word *falaq* bears many meanings. The basic meaning of the word, however, is "a sudden splitting and a violent explosion." It is derived from the root *falq*. According to another definition, it bears the sense "exploded"; that is, it is a concept assigned to the result of the explosion phenomenon. *Falaq* is the outcome of a violent explosion. The word *falq* carries the sense of extreme and extraordinary speed. To give a couple of examples:

Tafalluq: Running at extreme speeds.

Mufliq: A poet who speaks in exaggerated terms.

After this brief etymological explanation, let us take a look at the dictionary meanings of *falaq*. *Falaq* is a noun deriving from the root *falq*. In descending order of importance, its meanings are as follows:

1. A creature that emerges with great speed from the splitting of nonexistence.

2. The plant that emerges from a splitting seed.

3. The reciprocal of *Samad* (a creature that needs to emerge by splitting, to be brought into existence from nonbeing.) (A.Hamdi Yazır, *The Religion of Truth and the Language of the Koran* (Turkish), Vol. 9, P.6369.)

4. In daily usage, as a meaning derived by analogy, the light that splits and emerges from darkness, and hence dawn.

5. The knotty wood used to beat the soles of the feet (whence the word *falaqa*).

In interpretation, the majority of commentators have preferred the general meanings. Many prefer the analogical

derivation (dawn, daybreak, sunrise). Some commentaries assign the meaning "the region of violent explosions in Hell" to *falaq* but the efforts to establish a basis for this in the Traditions are subject to controversy. Ibn Sina took *falaq* to mean the child that is born from the mother's abdomen.

The fact of the matter is that the word *falaq* means the result, or entities, arising from a sudden and violent explosion. The other senses of the word are secondary meanings assigned by analogy. The reason for these designations has been the insufficiency for 14 centuries of our knowledge of physics and astrophysics.

Let us now take a look at our physical and astrophysical knowledge related to the creation of the universe. From which grand event, according to science, has the universe originated?

As everyone knows, the facts of science and information perverted and corrupted by atheists are two separate things. Atheists (the Godless) choose any fact of science and take pleasure in leading people into error by dressing it up in an outfit of untenable assumptions. In relating the facts of science concerning the creation of the universe, I would also like to clear them from the distortions imposed by such persons. We may summarize the big bang theory dealing with the vast primordial explosion that brought the universe into being as follows.

During the last quarter century, important discoveries have been made regarding the expansion of the universe. The universe spherically expands like a balloon, conjuring images of spherical surfaces receding from a center. Readers of our earlier volumes will recall that God proclaims: "*We expand the universe*" in the Koran, and these disco-

veries are therefore in accord with that Book.

In the 1950's, the big bang theory was first propounded by Ralph Alpher, Hans Bethe and George Gamow, starting from the Einsteinian concept that the universe had to expand. This theory was the center of heated debate for many years. Materialist atheists in particular were dead set against this view, since they knew that the stories of Genesis in sacred scriptures would thus be vindicated.

Two discoveries in recent years have helped to establish the big bang theory definitely. The first is Edwin P. Hubble's discovery of the cosmic red shift observed in the spectra of receding galaxies. But the really decisive event was the discovery in 1965 of the 3 degrees Kelvin microwave background radiation, a remnant of the primordial explosion which pervades the universe. The big bang theory has since been restated in more elegant terms, and constitutes the basis for discussion of all phenomena in contemporary astrophysics.

Another discovery, this time from physics, has helped scientists to conceive how the big bang occurred. This is the decay of the free vacuum. It used to be thought that the vacuum was just a region where nothing exists. But it is now known that a vacuum is more of a plenum.

This recent view is the outcome of Heisenberg's Uncertainty Principle. Due to the uncertainty of quantum events, the energy of an electron fluctuates even after all energy has been removed from it, and the same applies to the points in a vacuum. These "zero-point fluctuations", if they could be tapped, would represent gigantic amounts of energy, and can be thought of as borrowing energy from other points in the universe. As a result, a particle could be created and then immediately destroyed with this borrowed

energy. This concept, which defies common sense, was first advanced by the Dutch physicist Hendrik Casimir in 1948. Such particles are called 'virtual' or 'ghost' particles, and if sufficient energy is provided from the outside, they can be actualized. The existence of such particles was proved in the same year by the American physicist Willis Lamb (see earlier topic 20). Recently, physics professor Paul Davies has bravely declared that the emergence of new matter from nothingness in this way is a proof of the Omnipotence of God. These modern concepts have aided and enhanced our comprehension of the big bang.

We therefore see that a violent explosion was the source of the universe, and was responsible for its physical structure and for the existence of stars and galaxies. According to recent calculations, this gigantic explosion completed its initial phase within a billionth of a second, at which time the matter that would form galaxies and stars was fused together. The incipient separations occurred in the first thousandth of a second.

This brings us to another recent astrophysical discovery. The question as to how galaxies are able to continue their existence had earlier been unanswerable, since their masses and gravitational forces were not sufficient for maintaining them as observable units. The mysterious concept of invisible matter has been invoked in recent years to explain this discrepancy, where invisible interstellar matter and black holes at the cores of galaxies create the power necessary to bind them together. All this has resulted from the initial primordial explosion that has come to be known as the 'big bang'.

Now, in the face of these astrophysical facts, let us behold the sacred verse in all its splendor:

"I take refuge with the Lord of (post-big-bang creation) from the evil of created things."

In defining beings and creatures, the Koran uses the term *falaq* to designate that they have come into existence after the primordial explosion. The most vital aspect of the verse is its synthesis of the attribute of Lordship with the word *falaq*. As many commentators have noted, this is the verse that best describes the attribute of Lordship. In ten-billionths of a second, a billion billion stars were spawned in an explosion of cosmic dimensions. This is possible only through God's Lordship attribute.

The attribute of Lordship implies ordering, giving physical order, training and birning to maturation. Indeed, the question that stymies all atheists is the following: "Why didn't the gigantic explosion cause a uniform and random scattering of matter throughout the universe? Why did it result in the vast order of unbelievable complexity we behold in nature?" Attempts to answer this question by random perturbations fall short of the mark, for computer studies have shown that random fluctuations in the early matter of the universe would lead to results entirely different from those that obtain in the universe at present. How did the myriads of interwoven patterns in billions of galaxies come into existence? This is the question that the verse answers. Otherwise, to reduce the incomprehensible complexity of the cosmos to simplistic hydraulic models of the early universe is reminiscent of the Greek philosopher who thought that the human brain, the most complicated structure in the universe, was nothing but a cooling device for the body.

God willed the forms of the material universe, and created an explosion with the command: 'Be'. The *falaq*, or beings resulting from this explosion, were then coordinated

within an incredible computerized order by the Lordship attribute of God.

In addition to the grand initial explosion, the sacred verse also accomodates the results of miniature individual ruptures. For instance, the *falaq* that results from the splitting of a seed is, in this case, a plant. Equally, *falaq* can be an organism that performs successive stages of mitosis by cleavage after conception. In all cases, it is necessary that these be set in order by the Lordship attribute after the first split.

This is the reason why the verse has synthesized to words *falaq* and 'Lord'. For all creatures have been created by a rupture or explosion, and this is defined in the dictionary by the word *falaq*. However, before anything can possess the properties necessary for existence, it has to be operated on and conditioned by the attribute of Lordship, receiving a physical or biological computer program.

The chapter bestowed on us is a prescription for taking refuge in our Lofty Creator from all evils, and the origin of all created things is described fourteen centuries ago. This is indeed an overwhelming insight:

"Take refuge in My Omnipotence from all created things, which have been formed by an explosion and ordered by My Lordship attribute. I am your Lord, the ruler of the galaxies, which I have scattered into the infinite reaches of space through a magnificent explosion that started form a singularity. Whoever takes refuge in Me is protected from all evils."

THE PERILS OF PORK MEAT

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إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ
وَمَا أَهْلَ بِهِ لِغَيْرِ اللَّهِ فَمِنْ اضْطُرَّ غَيْرَ بَاغٍ
وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ ﴿١٦٣﴾

(البقرة ٢-آيت ١٦٣)

He has forbidden you only carrion, blood, the flesh of swine, and animals sacrificed to other than God. But if one is forced by necessity, without wilful disobedience nor transgressing due limits then he is guiltless. Surely God is All-forgiving, All-merciful.

The Perils of Pork Meat

The fact that pigs are unclean animals, and especially that they carry the cyst of an infamous parasite (the trichina cyst), are sufficient indication that we should avoid any contact with them in our daily life. Even in societies that have observed the ban on pork meat for many years, however, some have begun to claim that it "can be consumed after thorough inspection by a veterinarian."

What, then, are the real reasons behind the prohibition of pork? Scientific investigations in the past quarter-century have uncovered the reasons for this ruling, and scientists have beheld with wonder the uncanny accuracy of the Koran in the present context as well. I would therefore like to start by summarizing the constituents of pork that are detrimental to human health.

The German medical scientist Hans-Heinrich Reckeweg has identified a novel protein called "sutoxin" in pork meat that causes various allergies. This poison causes allergic illnesses such as eczema and asthmatic rash. If the sutoxin dose is low, it gives rise to bodily fatigue and pains in the joints. In this context, those who assert that pork meat is more economical should consider the work loss of the productive labor force, in which case it turns out to be the most expensive meat there is.

This influence of pork has always been noted in various animal experiments. The property arises from the degeneration that occurs in the lymphatic system of the creature, as a result of continuous ingestion of food contaminated with bacteria. I shall return to this subject below.

There is a large amount of mucopolysaccharides in pork meat. Since these substances are rich in sulphur, they, too, lead to afflictions of the joints. Further, the growth hormone has a very high concentration in pigs, with the result that those who consume pork become subject to abnormal bodily deformations.

Another serious illness that the flesh of swine transmits is the SHAPE virus. This virus lodges in the animal's lungs, and for this reason.

I shall now deal with the most dangerous effects of pork on health.

1. Pork meat increases the proportion of fatty substances in the bloodstream. In our day, such products as sausages and salami is high.

The body gradually assumes the shape of a stove in those who consume pork, a fact that can be confirmed by simple visual observation in many a city of Europe. The research by Prof. Lettre using radioactive tagging has shown that the food tends to become concentrated in the same bodily region of its origin, which confirms the view that the accumulation of fat tends to concentrate in the buttocks in pork-eaters.

I now come to the subject of a fatal affliction that is conveyed by pork meat, namely *trichina*.

In his book on the subject, *This Wormy World*, Stahl has noted that there are 30 million trichina victims in the

world. Contrary to uninformed opinion, the damage inflicted by trichina is not confined to the formation of cysts in the brain. Since this pig-propagated pestilence also creates blood clots, as well as leading to other illnesses such as typhoid fever, it can result in sudden death. It frequently lodges in muscles, creating grave muscular ailments. Another swine-related illness is the pig's tapeworm, the consumption of hog lungs has been banned in many European countries. However, the risk of contracting this illness through ingestion of which is the most harmful of intestinal parasites, the foodstuffs that pose the greatest danger to human health are animal fats (suet). It is common knowledge that there are two kinds of fat in the flesh of animals: The first of these is the external fat that visibly covers the meat, while the other is the fat existing in the muscle fibers. In terms of fat concentration in the flesh, the second is the one to watch out for. In terms of this fat, the fat concentrations of common meat products are as follows:

1. Veal	% 10
2. Sheep	% 20
3. Lamb	% 23
4. Pork	% 35

The fats we ingest from animals are today known to be the substances that are least consumed in the blood. This stress results in the increase of lipids and cholesterol in the blood. If these substances remain in the bloodstream for a long time, they lead first to the clotting and then hardening of the blood vessels. In our day, it is accepted that the ill-advised consumption of fats is the prime factor behind cardiovascular disease. High fat concentration in the blood is a serious cause of aging, senility, paralysis and coronary thrombosis.

Any customer entering the butcher's shop today wants to purchase lean meat. But the fat that is really important in this respect is not the externally visible suet, but the one embedded in the muscles.

We may now ask: What if the butcher is selling only pork meat when you enter his shop? There are only two things you can do:

a) Either you buy that meat, poisoning your entire health and especially your blood vessels;

b) Or else you say: "I am a Moslem", leave the shop without buying anything, and thus rescue your health.

It can be seen that the Koran, with its decree, does not impose an arbitrary stricture but a unique boon on health.

It is suprising that the consumption of pork continues in spite of the fact that this property, namely its excessive fat content, is widely known. I believe economic factors play the deciding role in this matter. But this subject will soon become a serious health problem. It is evident that even in this day, cardiovascular illnesses are frequently encountered in societies that consume pork. The excessive fat content of pork has not, however, surfaced as a subject for public controversy until recently. This issue has lately been placed on the agenda, and it is to be hoped that the world will leave swine alone in the future.

Another drawback of the extra-high fat content of pork is that it leads to the excessive consumption of Vitamin E. Vitamin E is quickly consumed in those who eat pork, and a latent Vitamin E deficiency emerges. Now it is known that Vitamin E has many interesting duties, and among these is its influence on the sex glands. Obese persons and especially pork-eaters soon lose their Vitamin E, and become

sexually lethargic and impotent as a consequence. Since the lack of Vitamin E also leads gradually to a Vitamin A deficiency, it gives rise to various epidermal (skin-related) and ophthalmologic (eye-related) illnesses.

I now come to the second serious health hazard arising from the consumption of pork.

2. As I have mentioned at the beginning of this section, the lymphatic system of the pig is in constant arousal as a result of the filth it consumes, and is loaded with various protective substances containing albumin. These substances, which arise in the immune system of the body and are the subject of immunology, are extremely deleterious for other organisms, since these proteins — produced by one organism for the protection of its own cells — act as poisons for the cells of other organisms. Due to this fact, various forms of allergic illnesses and swollen tissues arise from the continued consumption of pork. And while it has not been definitely established yet, the probability is very high that these substances also create destabilizing deviations in the operation of our lymphatic systems.

Since the pig is an animal prone to many illnesses, it is impossible to eat its meat and not ingest these harmful albumins called antibodies at the same time. The conclusion is that pork meat is a food to be eaten not for nourishment, but to poison oneself in full awareness of the fact. And the plight of those who prefer it merely out of snobbery and a desire to show off is even more deplorable.

Another significant insight deriving from the sacred verse is that it has ruled out pork meat together with carrion and blood. An analogy has been drawn here between the bacteria and toxins that can form in offal and those that are delivered by pork. Our attention is drawn especially to the

albumins in the blood serum, and those produced incessantly by the lymphatic system of the hog. Pork meat has consequently been compared to carrion in the sacred verse in terms of filth and septicity, and to blood in terms of its harmful serum albumins.

In conclusion, I would like to comment on an association made with pork meat from the scientific point of view. Many Islamic thinkers have claimed that the only animal that is not jealous of its mate and does not fight for her is the pig, and that pork-eaters are sexually indifferent. As I have discussed earlier, the extreme Vitamin E depletion induced by pork fat lends credence to this view.

Another important sign is contained in the fact that our Holy Book, the Glorious Koran, prohibits pork meat in four distinct verses. The same command of prohibition can be found in the chapter of The Cow, 2:173; The Table, 5:3; Cattle, 6:145, and The Bee, 16:115. The recurrence of the ban in four different chapters underlines the fact that everyone should devote serious attention to this matter. For the problem of pork meat has been clarified in our age, and scientists have dealt in depth with this dangerous food.

THE FUEL OF HELL

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يَا أَيُّهَا الَّذِينَ آمَنُوا قُوا أَنْفُسَكُمْ وَأَهْلِيكُمْ
نَارًا وَقُودُهَا النَّاسُ وَالْحِجَارَةُ عَلَيْهَا مَلَائِكَةٌ
غِلَظٌ شِدَادٌ لَا يَعْصُونَ اللَّهَ مَا أَمَرَهُمْ وَ
يَفْعَلُونَ مَا يُؤْمَرُونَ ﴿٦﴾ (التقويم ١٦٦)

Believers, guard yourselves and your families
from a Fire whose fuel is men and stones, and
over which are harsh, terrible angels who do not
disobey God in what He commands them and do
what they are commanded.

The Fuel of Hell

The message we shall interpret in the verse is, obviously, *"the Fire whose fuel is men and stones."* Before proceeding further, we must constantly bear in mind that the Glorious Koran was sent down 14 centuries ago. It was impossible, especially in that age, to conceive of a fire whose fuel is rock.

In accordance with the method we have been adhering to, let us identify the most significant points in the verse:

1. In speaking of Hell and its Fire, the verse defines its fuel, informing us that this fuel is men and stones.

If the verse had only stated that *"the fuel of that fire is men"*, a metaphorical link could immediately be conceived, and the improvisation could be made that "the implication underlying 'man as fuel' is his own suffering." But stones are emphasized as the fuel of Hellfire along with men, barring the way to a metaphorical interpretation.

2. Why is the fuel of Hellfire indicated so explicitly? It could equally well have been given covertly; e.g., it could have been said that it is the fire from which jinn were created, or that it is a fire created by Divine Omnipotence, etc. On the contrary, however, a concept is introduced

which it would have been difficult for people living 14 centuries ago to come to terms with: *"The flame whose fuel is men and stones."*

On the basis of this verse, many thinkers of Islam have maintained that Hell will begin only after the Last Judgment has ended, whereas Paradise has been eternally existent.

3. The most important message conveyed by the verse is the scientific question it poses. This question is, quite clearly: What is the energy whose fuel is rock? The verse invites us to search for the answer in terms of the concepts of heat and energy in physics.

4. The obvious answer, namely coal, is precluded by the fact that there is a perfectly good word in Arabic for that purpose, whereas stones — simple, ordinary stones — are named in the verse. However, it should also be recognized that the designation of men as fuel is in keeping with a fundamental property of fuels: The basic fuel on earth is carbon, and human beings, since they bear a vast number of carbon atoms in their constitution, can naturally be considered as fuel in this sense. Indeed, if it were not for the fact that men are mentioned together with stones rather than coal, modern science would be justified in opting for this simpler explanation.

We must, therefore, first scientifically clarify how ordinary rocks can be fuel. For this purpose, we must inspect the concepts of heat and energy in the light of modern physics, and refresh our knowledge in this respect.

As everyone knows, heat is basically vibration. The vibration of atoms ceases at -273 degrees Centigrade, or zero degrees Kelvin. This implies that the atoms that surround us in our daily encounter with nature are in constant vibration. The three mundane states of matter, solid,

liquid, and gas, are all manifestations of different levels of energy. As energy is delivered to an atom, its vibration increases. In a solid, the atoms are frozen in a certain structure and their vibrations displace them only slightly. In a liquid, the bonds that hold the atoms in place in the solid state are no longer strong enough to overcome this vibration, and the atoms or molecules become unglued, sliding freely over each other. In a gas the energy is still higher, with the atoms or molecules flying about and occasionally colliding with each other. Living beings are able to exist in these states and especially in the solid and liquid states of water, since the chemical bonds necessary for their existence assert themselves at the associated temperatures. The temperature limits of the earth are quite restricted, varying between -80 and 3000 degrees Centigrade.

Suppose, however, that we continue to increase the energy until we reach millions or even billions of degrees. We then obtain conditions that are found only in the interiors of stars in nature, such as the sun or novae (stellar explosions). What happens is that the strong nuclear force, the force that binds the nucleus together and the strongest of the four physical forces, becomes insufficient to contain the energy of the individual protons and neutrons, and these begin to fly about in a sort of "atomic gas" together with electrons. This is the fourth, or 'plasma', state of matter.

Now how can such high levels of energy, or indeed energy itself, be obtained? There are basically two ways to obtain energy: One is chemical, and the other atomic, or nuclear. (Since our subject is fire, we here neglect other forms of energy such as mechanical energy). The interaction of chemicals can lead to reactions that are exothermal,

i.e. energy-releasing; the combination of carbon with oxygen, or combustion, is of this sort. As we all know, chemical reactions occur through the exchange of electrons in the outer shells of atoms.

But there is another way to obtain energy from matter. For this we have to go straight to the core, or nucleus, of the atom. It turns out that the nuclei of different atoms, or elements, are bound together by different amounts of energy. The elements in the periodic table can be ordered in increasing number of protons (or atomic number), and the "curve of binding energy" that holds the nucleus of each one together can be drawn. It can then be seen that the curve possesses a trough around iron, which is the stablest of elements, and that more and more energy is required to hold the nuclei together as one goes to the extremes of the curve. This means that the nuclei of the lightest elements and the heaviest elements are bound together most weakly, and that nuclei of elements tend to assume energetically more stable configurations as they approach iron. It also means that the heavier elements can be split or the lighter elements fused together, with a yield of both stabler elements and a certain amount of energy. What happens is that the change of configuration also converts a tiny amount of matter into energy, a possibility known to exist ever since Einstein.

If we split a heavy nucleus such as uranium by bombarding it with neutrons, therefore, we obtain terrific amounts of energy as the uranium nucleus splits into two smaller nuclei, a process called 'nuclear fission'. Conversely we can fling two hydrogen nuclei together to obtain a helium nucleus plus a considerable amount of energy, and this in turn is called 'thermonuclear fusion', since extremely high temperatures are involved. The fission process is the

principle of the atomic bomb, while fusion is the principle of the thermonuclear, or hydrogen, bomb. The latter is also the energy that fuels the stars; indeed, the sun can be compared to a place where millions of hydrogen bombs are being exploded every second.

When the fission process is brought under control, it becomes possible to build a nuclear power plant. Now the fuel of such a plant is neither coal nor oil; it is uranium-235, which is extracted from uranium-238, and this in turn is to be found in its oxide form in ordinary rock. (Rich concentrations of uranium ore are the only ones economically worth mining.)

Yet the implication of the sacred verse goes beyond this, for it is not confined to such a rare reaction obtainable under highly specialized circumstances alone. Otherwise, it would have mentioned only rocks and not men.

A vast amount of energy lies locked in the nuclei of matter. In accordance with Einstein's equation, $E = mc^2$, it is known that a single gram of matter, if converted into energy, would yield energy equivalent to that contained in 2500 tons of coal. If the atoms of men and stones could be converted directly to energy, we would be faced with inexhaustible amounts of fuel.

The real aim of the sacred verse, then, is to direct our attention to this fact. In other words, it intends to teach us the truth hidden in the essence of matter. And if Islamic scientists such as al-Biruni and Jabir had been allowed to continue their Golden Age, we might have discovered nuclear fission five centuries in advance.

At this point, I would like to address a question that may have arisen in the minds of many readers. In my five small books, we have beheld the extent to which the Koran-

delivers marvellous messages related to physics and biology. Why, then, did great advances not occur in these branches of science in Islam?

In seeking an answer to this question, it must first be noted that within 100-300 years of the date when the world was graced by Islam, Islamic scientists had already made the basic discoveries in all fields of science. Al-Biruni in physics, Jabir of Khorasan in mathematics and chemistry, Omar Khayyam in mathematics, Ibn Sina in biology and medicine — all these men laid the foundations on which modern science was to be built. When the history of science is examined with an impartial eye, it is readily seen that the basis of physics, mathematics and biology is rooted in the work of the scientists of Islam. The same discoveries were later repeated in Europe, with the result that 900 years in the progress of civilization were wasted.

Subsequently, the Islamic world came under attack from two quarters: It suffered the Mongol invasion on the one hand and the Crusades on the other. The first was ferocious in its violence, while the second dragged on like a chronic illness for centuries. By the time the storm ended in the 16th century A.D., the West had undergone a rebirth (the Renaissance), while Islam was torn by political struggles having little to do either with religion or with science.

We now return to our commentary. The wholesale conversion of the matter of men and stones into energy and gigantic amounts of heat will, of course, proceed via liberation by the Omnipotence of God. In the minds of many, however, the question will still not have been resolved: How can any sign of life remain in men at temperatures which reduce atoms to plasma? The answer to this question is significant not only in terms of the implications of this verse, but also as regards the question of how life can be

maintained in men in Hell even at a high level of ordinary heat.

In order to do this, one must begin by recognizing the continuity of life once the present world is over and the transcendental order has been established. The ability of quanta and molecules to bind together arises as a command of God. Especially in the realm of living beings, such relationships entail a time schedule programmed into the structure in question. But there is no need of such temporal programming for the establishment of such relationships, i.e. the institution of life, on the other side. Indeed, it may be recalled that billions of years of the universe's development were coded into the first millionth second of the primordial explosion that gave birth the cosmos, and that the galaxies -to-be were already in place by the sixth second.

In Hell, then man will be consumed entirely only to be reconstituted in the next instant, a process that will continue indefinitely. According to some great men of Islam, this physical rhythm will serve to purge the perverted and corrupt aspects of men, and Hell will purify the misguided like a laboratory. The fact is that the Divine Order will purify man, the wayward child of the universe, at the same time that it is punishing him, just as it does in this world.

Such, then, are the meanings buried within the secret of man as fuel.

SECRETS OF THE HEART

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خَتَمَ اللَّهُ عَلَى قُلُوبِهِمْ وَعَلَى سَمْعِهِمْ وَعَلَى
أَبْصَارِهِمْ غِشَاوَةً وَلَهُمْ عَذَابٌ عَظِيمٌ
(البقرة ٢ آيت ٧)

God has set a seal on their hearts and their hearing, and lowered a veil over their eyes; great is the penalty they incur.

Secrets of the Heart

This verse is one of the most magnificent scientific marvels of the Koran. It is impossible to know and understand man without comprehending the facts of science hidden in this verse. While those who believe that the heart is nothing but a lump of flesh and expect deliverance through artificial hearts wallow in ignorance, the Glorious Koran, the source of all wisdom in the universe, describes man from his deepest and most essential center. Those who have been reading the fifty verses sheltering secret marvels of science in these five books ask: "Why don't people rush to faith in the face of this great miracle of the Koran? Don't they have minds?" The Koran, in turn, replies: "They may have minds, but they do not have hearts."

As we have done with earlier verses, let us first identify the messages delivered by the divine decree:

1. The close relationship with the heart of two fundamental sense organs, the eye and the ear, is emphasized.
2. The fact is expressed that the heart is the center of perception, and that truths cannot be known if Divine Omnipotence seals it.
3. Even though the eye, ear and heart may appear to

be functioning, the faculty of evaluation that is their essence can be lost. For the grandest achievement that man can arrive at in the universe with these organs is the perception of God. If he cannot attain this secret, these organs may be considered to have been stripped of their essential property. This is the insight that lies in the depths of science.

4. What makes a man a ~~man~~ is the intuition of the heart.

5. The eye and the ear not merely simple sensory apparatus, but possess the quality of judgment and perception in addition to their duties of sight and hearing.

We must, therefore, become acquainted with the organ called the heart in all its aspects before we can understand and interpret this verse. Hence, I shall attempt to describe the heart to you in scientific terms below. I shall try to provide a historic answer, taking refuge in the grand message of the verse from those who have advertised the heart as a lump of ordinary muscle down the years in overt repudiation of conscience, love, and faith. Please do not consider the detailed information given below as a diversion from our main subject, for even the blood distribution function of the heart is a lavish display of divine wisdom.

What manner of organ is the heart? What are the peculiarities that distinguish it from other organs?

Structurally, the heart is not just an organ the size of a fist in the cavity of the chest. On the contrary, it is a very different organ that extends to the farthestmost cells in the body. For the organs we call blood vessels are not simply pipes fitted on the heart, but are the very extensions of the heart itself. The sciences of anatomy and embryology bear

testimony to this undeniable fact. As I shall explain in detail below, the heart distributes life molecule by molecule to the farthest cell, within the unerring order of a thousand computer calculations. There are different conditions in each part of the body, which change continually from one instant to the next. The heart, however, ceaselessly makes its computations with all the skill of a great mathematician, and the various biological processes in all parts of the body are enabled to continue in this way. This calculation is not less impressive than the physical structure of a galaxy. Since an understanding of the heart must begin with the comprehension of this point, I would like to expand on the subject by means of a few examples.

Suppose you are beginning to study. In response, the heart will expand the arteries in the memory centers of the brain, and the vessels of your stomach, which is presently at rest, will be narrowed immediately. If you were to drink a glass of milk at that moment, your stomach vessels would again dilate until the appropriate equilibrium is reached. Supposing that you are about to run, and your muscles will require more blood, the heart will increase the frequency of its beats. The ability to perform such an optimal calculation is a manifestation of the secret of 'the Living'. Can you still consider the heart a mediocre lump of meat in your breast in defiance of these facts?

More interestingly, the heart with its vascular extensions leads up to two open portals in the body. These are the lungs and the kidneys. The blood is purified by oxygen in the first of these, and cleansed of food remnants in the second. Now both these operations are accomplished through the finest pressure adjustments conceivable, for even the minutest error in pressure would result either in the bursting forth of blood, or in its inability to return from the tissues. As the heart performs these calculations and...

achieves these equilibria with the skill of a biological genius, it alternately expands and contracts a hundred thousand times a day within the harmony of divine art. Another recent — and surprising — discovery is that the heart acts as an endocrine gland, secreting a fluid which interacts with all the other hormones to aid the heart in these adjustments.

The heart also describes the most wonderful pattern of biology when it is developing together with the blood vessels in the mother's womb. This is the phenomenon of valve formation. The interior and exterior tissues of the heart perform such marvellous gyrations within its fourfold structure, that the magnificent wings resembling royal curtains known as the tricuspid, pulmonary, aortic and mitral valves are the result. As the heart pumps blood in and out, these veils, with their delicate strands that extend to the tip of the heart, open and close in such a way that they display the handiwork of our Lofty Creator like a divine scenario a hundred thousand times a day. The heavenly furbelows of these valves slowly tense in less than a second. This contraction begins in the hundredth of a second and slowly spreads in an undulating motion as the strings of the curtain tremble with ecstasy behind the departing blood as if in prayer. The mathematical precision of the valve is such a tremendous computational task that a delay in the contraction of even one of the thousands of participating cells could cost us our lives.

The tissue of the heart furnishes another exhibition of divine wisdom. All organs are formed of tissues built out of specific cells. The heart has a special tissue structure: Basically, it can be described as muscular cells, yet this structure is different from all other muscular tissue. The cells of the heart are all synchronized as if they were a single cell,

and definitely cannot behave as though they were separate cells. More significantly, the muscle strands are interwoven with a formidable tissue of nerves — in fact, the heart could also be called neuromuscular tissue. Besides this, there are a couple of nerve centers within the cardiac muscle and on the outside of the heart, and again a bundle of nerves between the walls of the heart. These three neural centers are comparable to miniature brains, and are responsible for the coordination of all the computational work described above. The heart has a separate and independent cerebral system in spite of the fact that there is a distinct nerve connecting the heart to the brain. Many physiologists accept that each cell in the heart can produce electricity and function like a neuron. Thanks to its indigenous nervous system, the heart can carry on its tasks even if the electricity from the brain is interrupted.

In addition to this rich nervous structure, another nerve ganglion near the aorta provides the connection between the heart and the vegetative nervous system. Glandular and emotional influences are conveyed to the heart via this ganglion.

The cardiac membrane, too, is a masterpiece of divine handiwork in its own right. The duty of this twofold membrane is to protect the heart from neighboring organs while it beats. For this purpose, the external wall of the membrane, while it fastens the heart to the ribcage, also secretes minute amounts of fluid between itself and the inner membrane. The secretion of this fluid by each cell over the surface area of the entire heart is so delicately tuned that it neither dries up, nor is it excessively produced. If the tuning were disturbed and the liquid dried, our hearts would suffer as if caught in barbed wire, while if it increased it would damp the heartbeats. The cells of the

membrane tirelessly adjust this moisture in a gesture of divine servanthood. Such is the magnificent wonder of biology that constitutes the main structure of the heart.

One of the most interesting aspects of the heart is its electromagnetic structure. Every organ generates a small electric current while it functions. But this current reaches gigantic proportions in the heart in comparison with other tissues, so that it is detectable in all regions of the body. Since this electric current also varies with the heart's mode of functioning, it can be traced graphically on paper, giving an indication of the heart's current state of health. This is called an 'electrocardiogram', or ECG for short.

A little-known scientific aspect of the heart is its magnetic fields. The heart has not been placed at random in the thoracic cavity; on the contrary, it is an almost electronic organ that has been mounted after a thousand angular computations, just like a radar receiver. Due to this precise positioning, the heart forms a magnetic field, with three components in three different planes. The first of these is a magnetic plane inclined left of center, having an angular tilt from the right shoulder toward the left flank. The second is a vertical plane passing through the right corner of the heart parallel to the main axis of the body. The third magnetic field lies in a plane that leads from the left shoulder to the upper corner of the liver. This last axis is the main direction of GCG recordings.

Since the activities of the heart are coordinated electrically, the stability of its magnetic system is very important. But a much more significant point is concealed here. The magnetic fields arising from the heart's activities reflect on all the cells in the body, enveloping every point with their own energy system. The heart is the source of all mysterious phenomena, from the acupuncture points of

the ancients Chinese to the biomagnetic fields surrounding man.

I implore my readers to bear with me if they fail to connect all this detailed information with the verse of our present topic. For in order to understand the scientific subtleties of the heart, we must first have a thorough knowledge of its structure. As I shall be explaining shortly, the heart is the interface between the physical and the metaphysical. The wondrousness of its material structure reaches its zenith with its system of biomagnetic fields.

Why is the heart adorned with such a magnetic architecture when the blood reaches the farthest cells with its life-giving magic, and when the heart already possesses the electronic systems to detect any event happening anywhere in the body, as the sciences of biology and physiology attest? And why does the heart possess its own miniature brain (the atrioventricle, or A-V, complex) when all other organs in the body are connected to the brain with a single nerve wire? All these marvels indicate that the heart is not a simple fluid pump, but rather that the magnificence of divine artwork is hidden within.

If we now turn to the emotional aspect of the heart, it is known that the heart has a different relationship to emotional disposition that goes beyond the vegetative nervous system. A person talking to his/her beloved does not feel hunger or pain. Your eyes become wet while listening to a tale of heroism. It is not possible to assign a role to either the brain or the vegetative nervous system in such instances. On the contrary, you feel something in the vicinity of your heart during these phenomena. Nostalgia squeezes your heart and its environs like a vise. You feel a warmth in your breast when in love.

In recent years, Russian scientists have advanced the notion of a third nervous system apart from the brain and the vegetative nervous system. They describe the center of this third system as an indeterminate point in the thoracic cavity. But the center of this nervous system is actually the heart, which directs emotional events passing beyond the brain in a separate structural harmony of its own. This fact, at whose doorstep science has only just arrived, is the basic secret of man. I shall now describe this system from the standpoint of the Omniscience of the Koran.

The nervous system is unidirectionally connected to all organs. But although both nervous systems, i.e. the central nervous system and the vegetative nervous system, are connected into the heart, the heart is also reciprocally connected to them. And although the connections involved are not definitely known, it is believed that the heart outputs to the entire vegetative nervous system, perhaps through the stellera ganglion located near the aorta. This output, namely the influences passing from the heart to the nerve centers, definitely reach the adrenal glands located near the kidneys, and the lachrymal glands which secrete teardrops. More important, the heart maintains control over the vegetative nervous system through its magnetic fields.

The conservative bigotry of the 19th Century has now been left far behind. In the light of this information, we are forced to recognize the heart as an electromagnetic transceiver at the very least.

The central nervous system and brain in our bodies represent the computerized order where records are stored and which conveys the commands of motion to various parts of the body, while the vegetative nervous parts of the body, while the vegetative nervous system is a system with

many facets that supervises emotional influences and many biological processes. The third system, on the other hand, is our dimension represented by the heart, unifying our entire material and spiritual existence and coupling it both to the brain and the tissues through electromagnetic links.

Our Dear Lord has equipped us with two important tools in sending us to earth. The first of these is the mind, or intellect, which interprets the information in the computers of the brain. The second is the heart, which produces knowledge directly, and perceive and interprets it. Although we can only reason about information with the mind, using it to derive logical conclusions, we can both produce and perceive knowledge with our hearts. We call this 'intuition' for short. Intuition does not resort to the information stored in the brain, but generates knowledge within the divine mystery we call perception. The mystery of the illiteracy of our Prophet, the most sublime being in the universe, is also concealed here, since he always delivered transperceptual truths via the insight of his heart.

It is not possible to encompass God with the mind. For the mind reaches deductions on the basis of information recorded by the computer of the brain and the five senses. Since God does not have a likeness or an opposite, as is indicated in the Chapter of Unity (Sincerity), the intellect cannot comprehend God; only the heart can sense Him.

It is again for this reason that faith has been described as 'faith in the Unseen' at the beginning of the Chapter of the Cow. Due to this fact, the Koran speaks directly to the heart, and consequently only the heart can understand it. Indeed, the mind cannot see or sense that all particles are iterating God's name, for it cannot see the atoms. But the heart, even if it cannot see this, can yet sense it, virtually

hearing the chant of individual water molecules as they are swallowed.

The description in the sacred verse, then, of the disappearance of perception from the ears and the sight of Truth from the eyes when the heart is sealed, is based on this insight. With the activity that originates at its center and pervades the vegetative nervous system, the heart imparts a different sense perception to the eye and ear, a concept that excludes the physical measures of light and sound. Further, with its electromagnetic force that embraces the eye and ear, the heart amplifies and focuses what is seen and heard. Let us now investigate this effect from the scientific point of view.

When you see a beautiful lady, you immediately notice how the magnetic field of your heart resonates, and how much clearer your perception becomes subsequently. Whatever the physical measure of your beloved's voice, can you explain the sense of pleasure that it leaves on you? Have you never observed how the magnetic field of your heart is shaken, and how tears roll from your eyes immediately afterwards, as you listen to a tragic story taking place a thousand years ago? This mechanism originates in the heart, and the lachrymal gland secretes fluid under the command of the heart. This phenomenon is the most interesting among excursions made by the heart. But the really serious effect is the discomfort arising from feelings of unease, and which starts from the cardiac region and spreads over the entire body like a magnetic field. Simultaneously, all the influences flowing from the heart to the vegetative nervous system cease, and we feel wasted, weak and utterly exhausted. Our appetite and even our sexual desires are swept away.

A very important fact underlies this vivid interaction: That of premonition.

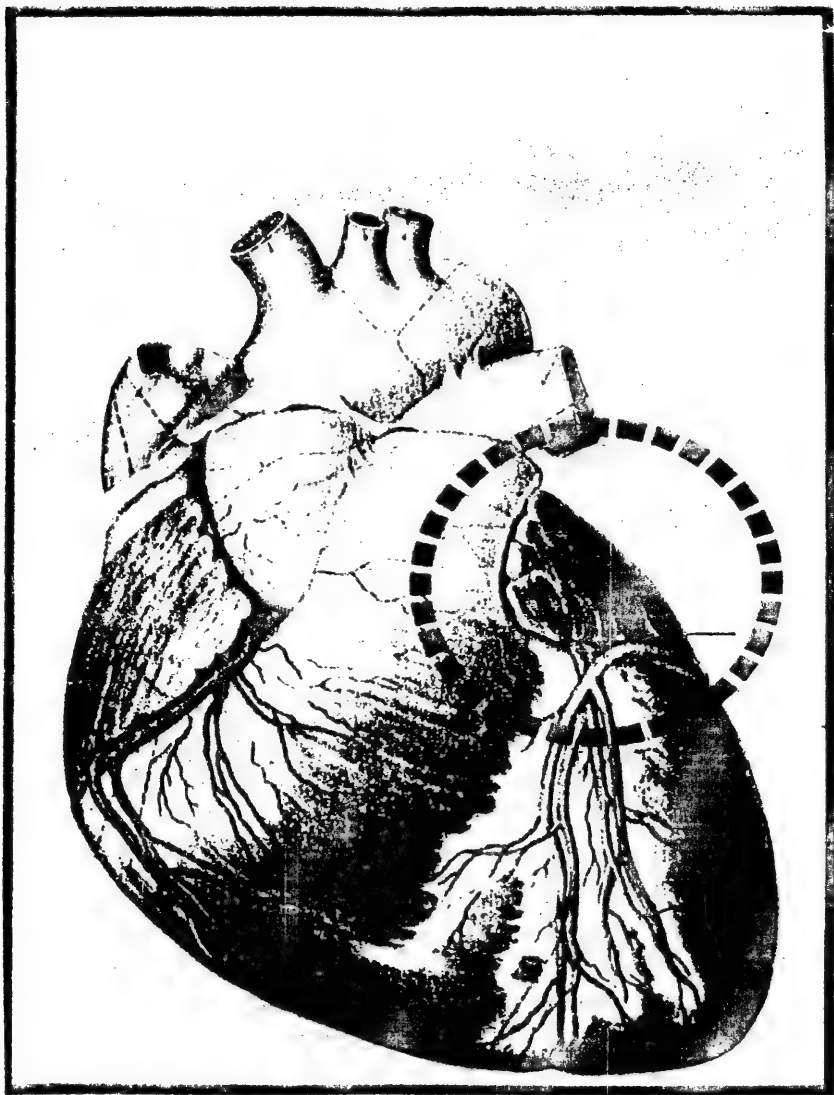
Premonition is the art of sensing what is not displayed on the computer screen of the brain. Uneasiness, or conversely the perception of a happy event, is one of the wonderful abilities of the heart. The heart, being a monitor that senses all truths in the universe, can catch an event along the time axis before it actually occurs. Premonitions are always realized in the cardiac zone and sensed by the heart: You almost notice the signal arriving through your heart region. This secret of the heart is more profound than even its electromagnetic ability embedded in its matter. Premonitions happen so frequently and are felt so clearly in the cardiac region that, far from denying their existence, science should stand in rapt admiration of them.

It is beyond this point, which symbolizes the passage from matter to spirit, that the most wondrous faculty of the heart lies; and that is Love.

The emotion of love, which no organ and no material display screen can ever comprehend, is in a sense the *raison d'être* of the heart. When it begins to rule our entire disposition with its premonitory powers, its electromagnetic and neural magnificence, it becomes so enraptured by the beauty it views from behind the veil of the eye that the most exalted aspect of man emerges — Love.

To deny the sage of love, which belongs solely and entirely to the heart, would be as senseless as to deny the universe. When you grasp hold of love, direct your attention to your heart. You will notice how wildly it is beating.

The trans-material properties of the heart also affect its material functioning. Hearts filled with love are stronger in distributing blood to the body through its 150 thousand kilometers of blood vessels. Their vessels are better computerized, more spacious and relaxed. Hearts full of hate



ruin both themselves and the cells they supply with spastic veins. Love is a mystery, a divine manifestation, a sacred feeling born in hearts only through faith in their Lofty Creator.

God, who created man as the apple of the universe's eye, has bestowed on him the miracle of the heart from His mysteries, and has placed His signature on the human heart. I shall now present to you the divine autograph on the heart, which I have been publishing for twenty years on various occasions.

The word "ALLAH" (God) is clearly written in Koranic (Arabic) letters over the left auricula of the heart. This writing can be observed in all photographs of the heart taken from the direction of the left auricula. The picture reproduced here is from the 1952 edition of the world-famous Sobotta Atlas (pp.60-61). It is possible to behold the same signature in full clarity in the sections pertaining to the heart of Abbot's Transparent Atlas of Anatomy, which is again world-famous.

In order to see this autograph in the heart of a dead person, it is necessary to slit this region slightly at both ends, since the signature is in the form of folds like the deep lines in the palm. As the heart beats 80 times a minute, it stretches at each heartbeat, displays this signature like a banner, and the latter dances in billions of hearts at each instant of time. This anatomical autograph signed by God Almighty over the heart is, at the same time, a magnificent miracle of the verse we are interpreting. God the Exalted declares: "I have placed My signature on this heart, the masterpiece of My artwork. If you don't fill it with faith and love, I shall seal it."

There will doubtless be those who do not believe in this

display of Divine Handiwork, claiming that this is a forced contrivance and that the resemblance is superficial. To such persons, who do not shrink from ascribing the magnificence of the entire cosmos to chance, the verse under discussion already provides the answer: *"When the heart is sealed, the eyes cannot see."* Not all the wonderful patterns of physics and biology taken together would suffice to open their spiritual eyes. Those whose hearts are sealed and eyes veiled will fail to see the truth under their very noses.

The thirty trillion trillion trillion atomic nuclei in a man's body endlessly repeat God's name. Their iteration is broadcast to the worlds as a different composition for each substance. Since the human heart is sealed and the eyes veiled, however, it remains unaware of this limitless divine symphony. Thus, another secret of the verse is revealed: *"Their ears are sealed."*

In order to hear the magnificent music of the atoms flying in the air and the endless iterations that ripple from our bodies to the universe (nuclear magnetic resonance -- see our topic 31—), a secret from the heart must be reflected to the ears. Otherwise, man will think that the universe is mute.

This magnificence continues even though veiled eyes cannot penetrate to it. The fact that sealed ears do not hear the ceaseless chant in the universe cannot conceal the splendor of the Sacred. The infinity of God's art always keeps its secret alive, displaying it to eyes with the ability to see. The eternal waves of thanksgiving are not beyond space and time, but dance within it in the macrocosmos and the microcosmos.

Once the curtain is lowered on the spiritual eye, once the psychic ear and heart are sealed, then everything is all

over, really. A person can travel, read, write, even listen arithmetic quantities, music is a sound wave, and what he reads and thinks are digits on a computer screen.

He who does not see with the Eye of the Heart cannot be claimed to have seen anything. instead, he views everything as he would a movie cartoon. The real reason for all conflicts, misunderstandings, and living with a hyena like—greed is such sealed hearts. Contrariwise, he who watches through the window opening on the divine secret of the heart, beholds infinite beauty and sacred art. And he who hears, in that instant hears chanting of all things.

THE FRACTURES OF THE EARTH

●

الْأَرْضِ ذَاتِ الصَّدْعِ ۝۱۲

إِنَّهُ لَقَوْلٌ فَصْلٌ ۝۱۳

(الطارق ۸۶) ۱۲-۱۳

By (the token of) the earth, with its fractures:
Surely this is a decisive word

The Fractures of the Earth

The Arabic word *sad'eh* is akin to splitting and cracking. Its exact equivalent is "with fracturing."

Let us first briefly review the structure of our earth. Strange to say, although we are more or less acquainted with the farthest reaches of space and the stars and galaxies it contains, science knows little about the earth's structure down to its core. What are the layers stretching down 6378 kilometers beneath our feet to the center of the earth? What goes on feet to the center of the earth? What goes on down there? We do not yet know, but we can make some informed guesses based on indirect evidence. The probable structure of our earth, on the basis of research that does not exceed 30 kilometers in depth, is as follows:

On the surface of the earth is the shell we live on, composed of soil, water, and igneous, sedimentary and metamorphic rock, called the earth's crust. Taking the highest mountains into account, its thickness is 40 kilometers. At the very center of the earth, on the other hand, is a solid inner core of iron and nickel, thought to be 2400 km in diameter. The structure that lies between this core and the crust is much more controversial, but with volcanoes as the major source of inspiration it is suggested that this intermediate layer is composed mainly of two sections. Sur-

rounding the inner core is the outer core, a liquid mixture of iron and nickel, with a thickness of 2300 km and lying 3000 km beneath the surface of the earth.

Between the liquid layer and the earth's crust, there are two separate mantle layers. The upper mantle extends to a depth of 600 km and the lower mantle to 3000 km. This mantle layer, in which strong convection currents flow, also links the magma (molten rock) and the crust. The magma is like an ocean of dense liquid on which the earth's crust floats; that is, the crust resembles a raft drifting extremely slowly over the liquid magma of the earth. While it floats, however, the earth's crust as a whole develops strong and weak stress regions. These areas usually take the shape of deep ridges, on both sides of which mountains form.

This molten magma between the earth's core and its crust sculpts the continents and oceans as a result of heat and magnetic effects. The present appearance of the earth has been prepared by the computerized currents in this magma. The continental land areas of the earth were once joined together. Convection currents first produced a crack in the middle of the Atlantic Ocean, and this fissure then spread towards both sides separating the continents from each other. This phenomenon, first hypothesized by Alfred Wegener in 1912 and condemned for many years, is known as the continental drift, whose origins date 200 million years back into the past. The separation was completed 50 million years ago and the globe assumed its present features, although the drift still continues at the rate of 5 cm per century. However, the fissures in the crust which divided the continents are still there.

The earth, then, is cracked in many places. It can be seen that just as in every other subject, the Koran has

declared a great marvel 14 centuries in advance: "*By the token of the earth and its fractures.*" Let us now trace this miracle of the sacred verse over the map of the earth.

The first and greatest fissure, the Mid-Atlantic Ridge, starts from the outskirts of Greenland in the north of the Atlantic Ocean, and stretches south all the way to the Antarctic. The second global crack follows the Pacific coast of North and South America. The third important rift, on the other hand, passes in great part under the land surface of the earth. It leads through South Asia, passes under the Himalayas and continues through Turkey.

Besides these, there are numerous other small fissures. All these cracks are regarded as 'earthquake zones', and if we examine their formation, we come across another miracle of the Koran.

If things had been the way the poor atheists conceived, these cracks forming on the surface of the globe would have grown under pressure from the magma, and the earth would have become one gigantic volcano, which is one reason why Wegener's theory was rejected for such a long time. In reality, however, upwelling magma piles up and solidifies to form new crust fracture zones — mountain ranges are formed, and the fissure is virtually embroidered on both sides by divine needlework. Indeed, it is decreed in the Chapter of the Bee, 16:15, that "*the mountains prevent earthquakes*" (see 21:31 and earlier topic 28 of this book).

On the other hand, a plate of crust may plunge under another in what is called a subduction zone. For example, when the oceanic crust and land crust met in a fissure called the Peruvian-Chilean plate at the Southwest American coast of the Pacific Ocean, the famed Andean Mountains emerged along the subduction zone.

Thus the matter rising from the mantle in the middle of oceans congeals, forming masses of gigantic plates that recede from each other. Another mode of this cleavage process has resulted in the famous Tonga trench, which has been formed by the submergence of the oceanic plate, thus producing a lateral depression.

These cracks and movements in the earth's crust have led to the concept of plate tectonics. In this view, active fissures have formed 'plates' on the earth with its land and seas to a depth of 95 km. It is the inescapable consequence of physical logic that these plates should themselves be in motion (Further details on this point can be found in Book 1, Topic 8).

Historical geology lends credence to the view that the great mountain ranges of the earth were formed through the convergence of drifting continents along the borders of these cracks. The Urals were formed as Europe approached Asia, the Himalayas as India approached Southern Asia. In addition, the folds rising from the ocean floor right after the great rift in Southeast Asia have resulted in the chain of Indonesian islands. Today, both the Mid-Atlantic Ridge and the plate formations in the Pacific are published as pictures in large encyclopedias, bringing, as it were, living proof of the verse being interpreted graphically to the screen.

A very important aspect of the sacred verse is the way in which its message is related in the *Taraq* Chapter. After informing us of the marvels of space and quasars (*taraq*) in Verses 1-3, God Almighty draws our attention to the creation of man (Verses 4-10), and then to the reciprocating heaven (Verse 11) and the cleft earth. Now as I have explained while interpreting the verse dealing with the reciprocating heaven (see our Topic 35), magnetic tension is one of the most important phenomena encountered in

space. Observe, then, the subtlety of the sacred verse presently being discussed, for the prime cause behind the convection currents in the magma which result in the cracking of the earth is, again, the internal magnetic forces of the earth. Furthermore, this cracking itself possesses reciprocity. That is, the fissure formed in the earth drives the crustal plates apart, while simultaneously causing them to converge and pile on top of each other. According to many scientists, in fact, the hills and mountains, which we might call the wrinkles of the earth, are formed through these cleavages and their counterparts, the folds and pilings. Those who confine themselves to a superficial reading of the Koran fancy that the choice of words in the verses is merely a matter of poetic harmony, whereas the words also possess scientific significance, as evidenced by the terms *raj'eh* and *sad'eh* in this chapter.

Additionally, the chain of events that causes fissures itself arises from alternating, reciprocating magnetic field vectors. It is even accepted that the magnetic poles of the earth and the directions of magnetic force were different in past ages, for the continuous flow of nickel and iron metals in the liquid state gives rise to such time-varying magnetic fields. The reason for the constant magnetic field in the direction of the North and South Poles of the earth has still not been explained satisfactorily. In fact, this is why a solid, i.e. unchanging, core is assumed for the earth, with a liquid sea of magma on the outside.

For those who appreciate the science of the Koran in its totality, of course, these magnetic currents and reciprocating balances which have confounded science are all recorded in the computerized order of the earth (Hijr, 15:19). Indeed, the most important reason for declaring the fissures of the earth in this verse is to draw attention to the reversals in the balance of the great subterranean magnetic

fireball. Thorough investigation of these reciprocating geological events should ponder the following questions, and then in all fairness prostrate himself before the Master of sacred handiwork:

a) How are these giant fissures of the earth counterbalanced? How is it that the magma, which is under tremendous pressure, does not capsize the earth like a gigantic volcano?

b) How does the powerful magnetic convection of the magma shape such a comfortable and habitable crust?

c) How is it that among all these violent, reciprocating cracks and wrinkles, wonderful lagoons displaying a thousand beauties have endured unfailingly for millions of centuries?

d) How is it that the magnetic field of the earth describes a large geometric locus in certain directions (the Van Allen radiation belts), protecting the earth against dangerous cosmic rays and magnetic storms arriving from space within the most delicately struck balance?

THE FAIREST OF STATURES

وَالَّتَيْنِ وَالزَّيْتُونَ ۝١ وَطُورِ سَيْنِينَ ۝٢ وَ
 هَذَا الْبَلَدِ الْأَمِينِ ۝٣ لَقَدْ خَلَقْنَا الْإِنْسَانَ
 فِي أَحْسَنِ تَقْوِيمٍ ۝٤ ثُمَّ رَدَدْنَاهُ أَسْفَلَ
 سَفِيلِينَ ۝٥ إِلَّا الَّذِينَ آمَنُوا وَعَمِلُوا الصَّالِحَاتِ
 فَلَهُمْ أَجْرٌ غَيْرُ مَمْنُونٍ ۝٦ فَمَا يُكَذِّبُكَ
 بَعْدُ بِالذِّينِ ۝٧ أَلَيْسَ اللَّهُ بِأَحْكَمِ
 الْحَاكِمِينَ ۝٨ (سورة التين ١-٨)

By the fig and the olive, and tur-u sinin, and this
 land secure:

We indeed created man in the fairest of statures,
 then we reduced him to the lowest of the low,
 save those who believe, and do righteous deeds;
 theirs shall be a reward unfailing. What then,
 after this, can contradict you as to the
 Judgement? Is not God the wisest of judges?

The Fairest of Statures

All verses in the Fig Chapter contain themes open to various interpretations. It goes without saying, in keeping with the dominant trend of this series, that I shall try to interpret the chapter from the scientific standpoint alone.

In its entirety, the chapter expresses not only the mysterious and lofty subtleties of man's material and spiritual aspects, but also his miserable side. The perfect beauty of man's creation is depicted in the fourth verse, while the key interpretations of this beauty are presented in Verses 1, 2 and 3. As I have explained in earlier verse commentaries, the appearance of an oath in the Koran while a subject is being explained always calls the presence of a scientific message to mind. The creation and moulding of man within the secret of "the fairest stature" is a very significant and undeniable law of the Divine Order. Man as a whole has the fairest form, shape and structure. He is the most handsome both in body and in spirit.

Since God Almighty formed man out of the fairest elements of Genesis in creating him, he is the fairest in terms of his corporeal structure as well. In general, Genesis is a system composed of the reflections of Divine Attributes. That is, the Divine Attributes of God Almighty reflect in a way incomprehensible to us to form observable

beings. In creating each being within this system of creation and in harmonizing and shaping it, the Lord God always sculpts beauty. In man, this beauty has manifested itself in the fairest of statures.

The subtlety of man's possession of greatest beauty in his structure and substance, occurring in the concentric circles of his biology and physics, fills those who can see and feel with admiration. Even the fact that all elements, metals and metalloids are present in the human body is sufficient indication that his creation is of the fairest stature. The presence of all elements in man remains inexplicable in terms of his biological needs. The number of elements vital to man are quite limited, being around twenty, whereas all the 92 naturally occurring elements are present in the human body, albeit in trace amounts.

The cellular structure that is the basis of all organisms is elevated to its zenith in the human constitution in such a way as to represent the fairest of the fair. Cells have various talents in all organisms, representing a restricted harmony. Certainly these too are part of the fair creation of the Lord. But the human cell, since it represents the fairest of the fair, has extraordinary abilities. A liver cell is able to manufacture chemicals that no chemical factory ever can. For example, it can alter the chemical structure of all poisons to be found on earth. Human poisoning is due to the excessive amount of poison ingested, not to the impotence of the liver.

A neuron in the human brain, less than ten microns in size, can record almost one million bits of information in its memory. This is considered to be the ultimate development bestowed by creation on matter.

The biographies of lymphocytes, entrusted with the protection of the human body, are a 'fairest stature' subtlety

in themselves. Hundreds of these cells surround each new cell as it is born, and destroy it immediately if it is cancerous. Nearly thirty thousand biochemical keys are given to lymphocytes in the thymus gland so that they might be able to recognize this cell. These keys are so sensitive that any cancerous cell, or any other different cell, even if it is healthy, is killed immediately. This in fact is why organ transplants pose such a great problem. This activity of lymphocytes represents such an advanced level of biological development that it is not possible for any other organism or any preparations in the laboratory to achieve this proficiency; it is a manifestation of the fairest stature.

I have, in earlier verses, already spoken of the wonderful systems and processes during our bodily buildup in the mother's womb. Here, too, there are extraordinary biological events unrivalled in any other organism. The coding of the well-nigh infinite traits of the human body into a sperm cell defies comprehension. Even the fine ridges called fingerprints, which form a different map in every one of billions of human beings, are coded onto the sperm cell's miniature cards, which cannot be measured even by a micron. The unending portrait peculiar to the facial structure of each individual human being is again coded on these cards. It is for this reason that these genetic records, which represent a structural unbelievable subtleties and beauties in human beings.

To embroider a human being's photograph on a DNA molecule, measureable in millimicrons, is a display of divine creation's 'fairest stature' art to the entire universe. This great delicacy of the genetic ciphers in the human body, the fairest of the fair, has been coded into a space a millionth the size of a dot. This unbelievable marvel is how the 'fairest stature' secret manifests itself as art in matter. In

order to remind us especially of this fact, the Koran, in its profound wisdom, delivers a miraculous message in its first and second verses.

How would you express the fact that male spermatozoa are small and numerous whereas the mother bears a single ovum, and the marvellous meeting of the two, without shattering the logic of a people living fifteen centuries ago?

"By the fig and the olive... We indeed created man in the fairest stature."

There must, therefore, be some similarity between the matter of man, created in the fairest of statures, and the fig and the olive, at its moment of creation. It is impossible to miss the depiction of spermatozoa by reference to fig seeds and the ovum in terms of an olive here. What is even more surprising, the ratio of the size of fig seeds to an olive is about the same as that of a sperm cell to the ovum.

I would now like to point out a couple of significant messages borne by the chapter in connection with man, the fairest in stature. The first message involves the climate and related health requirements that will foster man, the most delicate being in the universe. As many a commentator has noted, the fig, the olive and the concept of *tur-u sinin* (pronounced *tooroo seenéen*) in the first three verses of the chapter represent a favorable climate. Usually translated as Mount Sinai, *tur-u sinin* refers to a hill with an overgrowth of greenery. That is, if the climate in a region is conducive to the growth of figs and olives and has the conditions suitable to a verdant hill (*tur-u sinin*), that region represents the best climate in terms of human health. From this standpoint, Southern Europe, North Africa, the Mediterranean Belt and the south coast of North America repre-

sent such a climate. What is significant about these areas is that air currents prevent pollution on the one hand, while the luxuriant flora supports human health nutritively on the other.

The initial verses, then, deliver a prescription of health to man, the fairest in stature. Three important and unavoidable requirements of human health are known today. The first of these is the need for clean air. The green hill concept expressed by *tur-u sinin* is an ideal and miraculous definition of unpolluted air. The simultaneous filtering of polluted air and delivery of fresh oxygen by foliage represent the spiritual aspect of the mystery of 'the Living' as embodied in leaves.

As for the mention of the olive in an oath, i.e. in the form of a scientific message, this too is a miraculous key to the 'fairest stature' secret of man. First of all, the olive is a food specific to man. In terms of its influences, it is a unique biological treasure, from the manufacture of cell membranes to the various activities of brain neurons and sex cells. Furthermore Vitamin E, which plays an important role in myocardial tissue and in the manufacture of sex cells, is represented in the olive in a biological framework. This extraordinary structure of the olive once again emphasizes the biological superiority endowed by God on man, created with the secret of 'the fairest of statures. That olive is not animal fodder, but a superb prescription of life prepared through incomprehensible chemical processes.

As for the fig, it has a special place among all fruits due to its growth by what we call 'plant nectar'. This nectar is a biochemical treasurehouse containing a combination of protein, phosphorous, and ribose. This fluid, having the texture of milk and prepared as a laboratory miracle no mind can conceive by the mystery of 'the Living' in the soil, both

emphasizes the emergence of life from the soil and defines the phosphorous-ribose-protein combination, or the DNA molecule, in man.

This peculiarity of the fig expresses both the biological fundamentals of the structure of man and the fact that the nutritive compostie ingested with the fig is a primary source of food. For this combination, initially prepared as a milk and which later forms the liquid matrix of fig seeds, bears the three main materials of the cell simultaneously. The divine message that recalls to us this milklike nourishment, as real as blood, and the structure of the fig, also calls to mind the two fundamental fluids of human existence, namely milk and blood. God has bestowed this threefold secret of life, from clean air to the properties of the fig and olive, as a blessing on man, who has the fairest mould and who iterates His name.

THE MYSTERY OF THE 'BE' COMMAND

●

﴿٨٢﴾ إِنَّمَا أَمْرُهُ إِذَا أَرَادَ شَيْئًا أَنْ يَقُولَ لَهُ كُنْ فَيَكُونُ

His command, when He desires a thing, is to say to it 'Be', and it is.

The Mystery of The 'Be' Command

I shall now discuss the scientific subtleties of the 'Be' command, an important fact declared in various verses and hence ranking among the fundamental laws of the Koran.

When the positive sciences were first being developed in the 19th Century, it was thought that the universe was a system that had slowly evolved over the aeons. In our day there are still those who share this entirely discredited conviction. It is an obsession that contemporary man cannot give up to wish to comprehend God's secret of creation, whether it is the genesis of all universes or solely the material universe that is involved.

In order to acquire knowledge of the facts of creation, however, it is necessary to have a thorough comprehension of such concepts as distance, space and time, and of the laws of astrophysics which constitute a mathematical program. In contrast to the past, today's science have all brought explanations that are in accord with the science of the Koran. I intend to collect these in a separate book. Here I shall present a brief scientific explanation of divine creation as symbolized by the command to 'Be' in the Koran.

An important point requiring attention is the harmony between the beginning and end of an event. The interval in between is the fate of beings in one sense, and their life-

times in another. We know from modern physics and biology that no phenomenon is able to alter its form by changing its initial mathematical program. A phenomenon of motion in physics must fulfill whatever outcome is dictated by its frequency, wavelength, and energy. A yellow light ray reaches our eyes from the sun unchanged after passing through a thousand influences between the sun and the earth.

We now turn to the interpretation of the verse. The aim of the verse is focussed on two points. The first of these pertains to Genesis, the primordial creation of the universe. In accordance with the decree of the verse, God Almighty said 'Be', and the entire universe was constituted instantaneously.

The second meaning of the verse pertains to the fact that the Divine Will can intervene in the processes of the universe whenever it wishes. God brings into existence whatever He wills in the instant He wills it.

Both of these alternatives are pregnant with scientific meaning, the comprehension of which requires knowledge of certain fundamental physical subtleties. Beyond this, it is certainly impossible for man to fathom the deeper profundities of the universe on the basis of opinions formed during his brief sojourn on this planet.

The significant point of the verse lies in the fact that the activity in question takes place within an instant. For this reason, it is first necessary to understand the nature of time. Some explanations in this connection have been given — earlier in Topic 19 of this Book. In the present context, however, I would like to look at the subject of time from a different standpoint.

What kind of position does time occupy among all other created entities? Is it an activity or a creature? Certainly the Faithful believe that everything that exists has been created by God. Let us see what science has to say on this subject.

The big bang theory, which we have earlier has occasion to deal with, has an admirable approach to the question of time. It will be recalled that the birth of the universe was completed within the thousandth of a second after the primordial explosion, and the initial formation of the galaxies within the first six seconds. Yet it has, in contrast, taken the continents of the earth millions of years, for example, to find their present locations. What is the allowable physical conclusion to be reached from this observation? It is that time itself is an entity that came into existence with the big bang. Many physicists accept that time started with the initial explosion, and that it is meaningless to talk about time as we presently understand it prior to this.

Physically, therefore, time is a creature and a created activity. The attachment of the term "before Time" to anything antedating the creation of the universe in Islamic thought accords well with this physical insight.

Having acquired a foothold on this concept, we can now inspect the major facts of physics related to time in greater depth. It will be remembered from earlier Topic 4 that time is a dimension and a coordinate according to Einstein, while it is a form of energy according to the Russian physicist Nikolai Kozyrev. Physicist David Finkelstein has even conceived of 'chronons', or particles of time. These physical approaches all clearly indicate that time is a creature, that it is an entity created by God.

We cannot, of course, divine the true reason as to why God saw it fit to create time, but we nevertheless have some notion of its role in the workings of the universe. The main uses of time within the cosmic order are summarized below.

1. *The sequencing of events.* The concepts of 'earlier' and 'later' arising, for example, from the differences between night and day.

2. *Termination of events in the realm of multiplicity,* as well as their initiation and continuation, such as life and death or sleep and other activities.

3. *Creation of different forms of matter and energy.* The role played by time is exceedingly important in this respect. Both matter and energy are differentiated through the different energy levels or vibrations of quanta. Even the various colors arise from the oscillation of photons at different frequencies within the dimension of time. If light rays has not possessed the quality of diversified oscillatory activity, the universe would have been monochromatic.

4. The activation of the predetermined fate of a being again depends on the mathematics of the entity we call time. For example, although the entire life program is coded into the conceived ovum, its unfolding from script to action depends on its path down the time axis (its 'world line', in relativistic jargon). The baby becomes able to survive outside the womb in 40 weeks. In this way, time displays a prearranged program on the screen.

5. Last but not least, time is subject to variation within the system of dimensions. Its action is more pronounced in the ordinary three dimensions, but more ethereal and flexible in the fifth and sixth dimensions (the concept of time in Paradise — see Topic 8).

We shall now observe the subtleties of the 'Be' command in all these facts of science. The decree of God Almighty, *"We say to it 'Be', and it is"*, has identically occurred at the big bang, time being created together with everything else within this command and will. The supra-temporal power and intensity of the Divine Will has been exercised on all beings and objects in that moment in the form of individual programs. Each event whose turn comes in the sequence of time is, again, constrained to execute its program within the specifications of the command to 'Be'. For instance, the end of the world is an indubitable decree programmed within that 'Be' command, and time is a servant charged with terminating the program after completing its execution. Let us now behold the answers to some questions we have been pondering all our lives in the light of the 'Be' command.

The cruel will be destroyed by their own cruelty. This is an ineluctable law of the divine program. Just as a person is electrocuted upon touching a high-tension wire, the cruel will perish under their own inhumanity. The delay for a certain period of time cannot save them from this inevitable destiny.

Again, the long formative period of the earth does not — God forbid — imply an unexpected delay in the realization of the 'Be' command. On the contrary, the cooling of the earth, its chemical and geological structure, its winds and atmosphere were all programmed in the initial instant of the 'Be' command. Its inexorable fate was to be realized, as it has been, within the action of time. The reason why we regard the associated temporal intervals as long is because our lives are so short, and because we cannot know the program in the Guarded Tablet.

Both certainty and speed, or intensity, are involved in the 'Be' decree. The instantaneous will is reflected in the program, and the phenomenon is initiated in that instant like a wound-up watch. Once the lifetime of the event has been set by the program, it has, in a sense, already taken place. This is why the verse says: *"We say to it 'Be', and it is."*

Now take a fresh look at all the galaxies, cells and atoms that constitute the universe. All of them possess an invariant characteristic, and this is the mathematical programs of these beings rather than their physical structure. Two cells may be identical in terms of their chemical structure, but it is their programs that impart their different characters. Atoms as well as all forms of radiation obey the same principle. The only difference between green and violet resides in the mathematical difference between the rays representing them. But this mathematical diversity is the expression of a program, a fate. Each being, then, owes its individuality to this mathematical program, and that program is simply a destiny arising with the command to 'Be'. This fact of science clearly shows that everything is born and foreordained by the 'Be' command, and in fact the sacred verse being interpreted is a definite, firm and scientific reply to those who do not believe in post-mortem resurrection.

Viewed from this point, the sacred verse clearly shows that the end of the world and resurrection after death also fall within the decree to 'Be.' That is, the resurrection of human beings is programmed in the soil just as their creation for worldly existence is programmed in a spermatozoon. The Last Judgment is subject to the same 'Be' order that brought the universe into existence.

Moreover, the birth, the implementation of a specific

line of fate, death, and the resurrection on Judgment Day of man is also programmed with the same command. It is impossible for this not to occur. Man is destined to be raised from the soil as surely as the semen falling into the mother's womb is obliged to become a baby, in written proof of the 'Be' command. The declaration in Verse 83 that: *"The divine possession of all powers belongs to the Glorious, to whom you shall be returned,"* explains the 'Be' decree and emphasizes that the return to our Exalted Lord is the unvarying end.

It is easy to see in the last page of the 'Ya Sin' Chapter how the verses of the Koran can be interpreted by recourse to other verses, where each verse explains another. Before the verse that cements the 'Be' command, the programs that start with man's creation from a drop of sperm find expression. The Koranic explanation of the 82nd verse, in turn, is to be found in Verses 71-81 in connection with the mathematical programs of all creation.

Finally, I would like to discuss the decree: *"You shall be returned to Him."* What could be meant by this return to God?

The exoteric (outer) meaning of the verse is the Judgment. Many commentators are agreed on this point. However, the verse also hides a very clear scientific implication. As I have related above, every creation is the proof in writing of the command to 'Be'. Every event programmed by this order is fated for an end. Man's worldly life is part of this command. That is, he has an existence before and after the world. Because of this, the result of worldly life is a return to the spirit. This means that the spirit of man is closer to God when it is freed of material density. A closer

perception of God in a sense entails the concept of returning to Him. A similar concept can be found in physics: When the matter locked in an atom is liberated in the form of energy, it enjoys a much more expansive and intimate relationship with the universe. Similarly, man's after-death life will achieve a closeness to God by means of a perception honed by faith.

THE SECRET OF PARADISE

■

عِنْدَ سِدْرَةِ الْمُنْتَهَى ⑬

عِنْدَهَا جَنَّةُ الْمَأْوَى ⑭

...There at the Lote-tree of the Boundary,
and nearby the Garden of Refuge.

The Secret of Paradise

In concluding this book devoted to the scientific interpretation of Koranic verses, I have felt it necessary to present a scientific definition of the concept of Paradise. There are two reasons for this necessity:

a) To give the atheists, who claim that the concept of Paradise can not fit in with science, the reply they deserve;

b) To bar the way to erroneous, though well-meant, metaphors of Paradise.

It goes without saying that we cannot hope to approach the concept of Paradise by this worldly judgments alone. I shall, however, attempt a scientific synthesis by taking into consideration all the other verses in the Koran declaring the qualities of Paradise, and the most important scientific message that sheds light on the subject is concealed in this verse of 'the Star.' Let us first find an answer to the question, "Where is Paradise?", the answer to which is supplied by the verse itself.

Paradise is beside the Lote-tree of the Boundary. The commentaries all give different interpretations regarding the latter, but the most scientific definition is the Tree of the Cosmos, or the boundary of the three-dimensional uni-

verse. Some commentators have considered the sixth level of heaven as the boundary of the material universe. Indeed, this view is in conformity with the concepts of astrophysics (see our topic 21—). No controversy is involved here, since the verse defines Paradise as just beyond the limits of the material universe. The significant point here is that Paradise is not within the material universe. As I have pointed out while discussing dimensions in this book (Topic 7), there are many dimensions in the universe. The space that takes its origin from the dimensions of length, height and width is the space of material existence. But there are other dimensions beyond these three dimensions, starting with the fifth and sixth dimensions, whose existence is a certainty. These dimensions constitute spaces among themselves that are quite different from ordinary space. Indeed, God Almighty has explained these various spaces in declaring that He created the universes like the pages of a book (see Topic 24)

So Paradise is beside the Lote-tree of the Boundary, i.e., the point where the physical universe ends. An important subtlety, however, is involved here. What exists there is the "Garden of Refuge." We learn from the Koran that there are 8 separate locations in Paradise. It is necessary to pass beyond the limits of the physical universe in order to access these locations. Now this is not a question of distance, as might normally be supposed, but of speed. A certain velocity results in a jump from the page of material locations to the page of paradisaal locations. This is doubtless an ability bestowed by God on man and which can be exercised by His consent alone.

The second message of the verse is contained in the composition used to identify the boundary of matter. It is possible, in Arabic, to express the concept of the limits of

matter in many different ways, yet God Almighty has chosen this expression in particular. Paradise is beside the Tree of the Cosmos, beside the border of the organization of created things. For this reason, the most important entities of the cosmos also exist in Paradise. Or rather the Tree of the Cosmos, although it projects into the ordinary universe as well, really exists in the universes of Paradise. All the beauties of the present world are but faded copies of the beauties of Paradise. Paradise is like real life, whereas the material universe and this world are like a two-dimensional movie cartoon.

Two concepts which the human mind will have the greatest difficulty in dealing with are those of time and gravitation (weight) in Paradise. The physical relationships that hold the greatest sway over things and beings in three dimensional space, i.e. in the material space of our world, are time and gravitation (or weight), whereas in Paradise, which is composed of dimensions such as the 6th, 7th and 8th, these two effects are attenuated or perhaps even indistinct.

Let us first investigate the subject of gravitation and weight in Paradise. In this connection, the Glorious Koran furnishes us with two important messages: "*Gardens underneath which rivers flow*", and the *ariqa* definition (locations in Paradise specific to man).

Both of these definitions yield the conclusion that gravitation, i.e. weight and attraction, is greatly softened in Paradise. If the concept of weight in Paradise had been the same as that on earth, the verse would have read: "*Gardens in which rivers flow*" instead of: "*Gardens underneath which rivers flow.*" In a sense, then, suspension in mid-air is possible in Paradise: In that magnificent life, the rivers of Paradise will be flowing beneath it.

The *ariqa* concept further clarifies this explanation. The choice being of Paradise (Faithful man) will be able to view all directions from spots specified in the Koran as *ariqa*. There is, then, no problem of attraction and weight in Paradise akin to that encountered in material space, although gravitational attraction, which is considered essential for many phenomena in this world, also exists in Paradise. This attraction is, however, phenomenon-dependent: That is, if it is necessary for a certain phenomenon, it is created together with the event (such as the flow of rivers).

The concept of time in Paradise also resembles that of attraction, in that it accompanies events only when necessary. For this reason, because there is no action of time, the concept of boredom does not arise. In Paradise, the immediate fulfilment of any wish (The Bee, 16:31), the sequencing of indescribable pleasures, proceeds by a gentle rippling of time. Here time is not an inexorable pendulum ticking away man's doom, but rather a vehicle of pleasure in the service of man. For example, lights and colors in the ordinary world use the action of time as a medium for manifesting their frequencies. In Paradise, on the other hand, their properties and effects will be of an entirely different nature. The most serious example of this is the Emerald Paradise mentioned in the Chapter of the Compassionate. Again, the sense of smell will be quite different in Paradise, representing a pleasure that will suffuse man's totality. Naturally in this book, which is primarily a scientific excursion, we cannot go into the details of all the different locations and conditions in Paradise.

Another important aspect of Paradise is man's corporeal and immortal existence therein. As everyone knows, Adam lived in Paradise with his body after his creation from

clay. Man's body, then, is actually designed for eternal existence in Paradise. His mortal existence on earth is a temporary passage when compared to his real life, which will continue in Paradise in corporeal form.

The main factor that condemns the body to death in this world is the need for energy. With its actions of time and gravitation (weight), the world compels the human body to excessive energy expenditure and a corresponding intake of food, leading to deterioration and death. Indeed, the reason for the aging and death of both cells and tissues is the constriction, attrition and hardening of blood vessels through food deposits.

There is no such energy requirement in Paradise, since weight and the action of time are removed. Only fruit is present in Paradise as a source of pleasure, and it is known that this does not cause degeneration of the tissues and blood vessels. It is also known from the science of interpretation that we shall have a special skin formation in Paradise, for the command: *"Undress and get down"* was issued when Adam was expelled from Paradise.

This special 'skin' is known to be an envelope of immortality. Our divestment of this skin in coming to earth is the most important cause that chains us to mortality in the world of matter.

Since contagious illnesses, cancer or vascular ailments do not exist in Paradise to cause mortality and death, it becomes easier to comprehend the immortality of life there. Since, further, factors that adversely affect beauty such as aging and wrinkling do not exist as a result of the special skin, immortal life will be accompanied by enduring beauty in Paradise.

Another important point is the beverages to be drunk in Paradise, which bear the secret of 'the Living'. As described in various verses, these drinks both give pleasure and bear the essence of vitality, constantly nourishing and refreshing man.

Paradise, then, is a universe unto itself, quite apart from the material and physical structure we are accustomed to in this world. As I have tried to explain, however, it is at least possible to conceive of it through a scientific approach. In describing that abode, the Glorious Koran introduces the concept: *"Beside the Lote-tree of the Boundary", bringing a profound approach to the physics of Creation. Centuries later, higher dimensions have been comprehended, and it has been realized that spaces constructed of dimensions such as the 5th, 6th and 7th can exist.*

The existence of angels in Paradise is another indication of such special dimensions. Here, too, the Koran gives us an important datum of physical information: The facility of speed is greatly increased in Paradise, and even distance itself is abolished. The attenuation of time and gravitation in Paradise, remaining only as a barely perceptible veil, also leads inescapably to this conclusion. Paradise is, therefore, an indescribable world of infinite beauty and pleasure, existing just beyond the borders of physical space.

THE IMPORTANCE OF MOTHERS' MILK

وَالْوَالِدَاتُ يُرْضِعْنَ أَوْلَادَهُنَّ
 حَوْلَيْنِ كَامِلَيْنِ لِمَنْ أَرَادَ أَنْ يُتِمَّ الرَّضَاعَةَ وَعَلَى
 الْمَوْلُودِ لَهُ رِزْقُهُنَّ وَكِسْوَتُهُنَّ بِالْمَعْرُوفِ لَا تُكَلَّفُ
 نَفْسٌ إِلَّا وُسْعُهَا لَا تُضَارَّ وَالِدَةٌ بِوَلَدِهَا وَلَا مَوْلُودٌ
 لَهُ بِوَلَدِهِ وَعَلَى الْوَارِثِ مِثْلُ ذَلِكَ فَإِنْ أَرَادَا فِصَالًا
 عَنْ تَرَاضٍ مِنْهُمَا وَتَشَاوُرٍ فَلَا جُنَاحَ عَلَيْهِمَا
 وَإِنْ أَرَدْتُمْ أَنْ تَسْرِعُوا أَوْلَادَكُمْ فَلَا جُنَاحَ
 عَلَيْكُمْ إِذَا سَلَّمْتُمْ مَا آتَيْتُم بِالْمَعْرُوفِ وَاتَّقُوا
 اللَّهَ وَعَلِمُوا أَنَّ اللَّهَ بِمَا تَعْمَلُونَ بَصِيرٌ ﴿٢٣٣﴾

Mothers shall suckle children for two whole years, for those who desire to fulfill the suckling.

It is for the father to provide them and clothe them honorably. No soul is charged save to its capacity: no woman should suffer because of her child, nor any man because of his. The same responsibilities are incumbent on the heir. But if (the couple) decide by mutual consent to wean (the child), there is no blame on them. And if you desire to seek nursing for your children (by hiring a foster mother), there is no blame on you provided you pay her fairly. Fear God, and know that God sees everything you do.

The Importance of Mothers Milk

To suckle her baby is extremely important in terms of a mother's own health, as well as that of the baby. Unfortunately, the joint propaganda of some materialistic physicians in cohorts with baby-food manufacturers has heaped scorn on mothers' milk for years, almost making it an object for jeers. In recent years, however, science has been forced to a recognition of the World Health Organization has banned all derisive propaganda directed against it.

In commenting on the sacred verse, I shall answer the following questions from a scientific standpoint.

- 1) What does mother's milk impart to the baby?
- 2) What should be the frequency and duration of nursing?
- 3) What effect does nursing have on the mother?

I shall deal with these questions in the same order.

1. The Nature of Mothers' Milk

It is known that nutritionally, man needs three basic foods, phosphorous, and vitamins. All these substances, namely proteins, sugar, fats, phosphorous and vitamins,

are present in mothers' milk. The distinction of this milk however, lies rather in the fact that it bears these substances in very finely tuned amounts and proportions, while the most important secret of its composition is that fatty molecules are dispersed within in very fine, small particles.

No matter what the composition of the mother's body may be, her milk is prepared more richly than the table of a tycoon. In particular, the entire vitamin requirement of the baby is present in the mother's milk for the first six months. True science laughs at agitated parents rushing to and fro in our day with a fruit press in their hands in an effort to provide Baby with Vitamin C.

I shall now speak of a stunning property of the milk of a mother.

There are antibodies in the mother's milk during the first six months that protect the baby against all infectious diseases. There are even antibodies protecting against measles in the milk of a mother who has never contracted measles, an inexplicable fact in biological terms. This can only be a divine indication of the value assigned to man by God.

Certain atheistic scientists have come forth with the ridiculous claim that the milk of mothers is deficient in iron. It has emerged in recent years, however, that blood is produced in the liver in infancy (whereas it is produced in the bone marrow in adults), and that iron is stored in the baby's liver even while it is in the mother's womb. Attempts to compensate for this supposed deficiency by medicines containing iron condemn babies to a lifetime of enteritis.

It is a biological imperative that the baby be nursed on milk during the first six months, since the liver, normally

the center of digestive activities, is largely occupied with blood production in babies. Furthermore, the baby uses nutrition for the purposes of growth and development rather than energy. For this reason, it is next to impossible to select the required food types and vitamins. We know that there are more than 50 vitamins in addition to the handful known to medicine. It is due to this fact that the growth and development of the baby has been brought under foolproof control by Divine Omnipotence with milk. To attempt to imitate this divine blessing with far-from-sufficient mental acumen is akin to waging space war with bows and arrows.

2. Suckling Intervals and the Duration of Nursing

Another embargo of atheists on the suckled is the rule of feeding every four hours, which they have invented by reference to the normal period of digestion. Research in recent years, however, has shown that milk is completely digested in 45 minutes. When this period is over, the secretion of milk in the mother's mammaries increases by a telepathic reflex, and the baby normally begins to cry due to hunger. All these events constitute a biological computer system, and as the periods diverge the baby's stomach is filled with acid, seriously disrupting its digestive system. It is even conjectured that this leads to ulcers in later life.

As for the length of the suckling period: Medicine, which is only just beginning to realize the value of mothers' milk, has assigned a completely arbitrary duration for this, namely nine months. But the basic logic of suckling is based on two facts:

a) The liver is heavily loaded because it is producing blood, and hence there is a need for milk. It takes about two full years for the liver to recede into the background as

regards blood production. For this reason, suckling should last two years.

b) The most important phase of development, the period when basic biological materials are required, is again two years. Medical science definitely recognizes that the first two years of development of the baby is the most significant phase.

Here is another miracle of the Koran, tucked away in this verse: The nursing period should be two years.

I would, to the chagrin of athesits, like to remind you of another point: Prior to Islam, the suckling period was 4-5 years in Middle Eastern societies.

One final point in regard to nursing: Research on childhood mental disorders has shown that a person must suck for two years if his/her mental health is to be robust. A study performed on a global scale has revealed that no child has mental problems in Indonesia and the Phillipines, and the research committee has found that this amazing fact is due to the sense of security and tenderness imparted to the baby during two years of suckling in those countries.

3. The Boons of Suckling for the Mother

a) The healthy functioning of the mammary glands:

Health statistics gathered the world over have shown that cancer of the breast occurs seldom in mothers who suckle their infants for 1-2 years. Mothers who do not suckle, on the contrary, run the greatest risk of contracting this disease. If only for this reason, 1-2 years of suckling by mothers ranks among the requisites of cancer prevention.

b) Biological regeneration occurring in the mother's body during nursing:

The liver functions at full capacity in a mother who suckles. All the chemical problems of the mother's body come under scrutiny in this way. Further, since all the required substances have to be mixed into the maternal blood, the mother's cells compensate for their deficiencies during nursing. Again, since the pituitary gland is in full control during suckling, the general hormone processes all function properly, and hence the psychological makeup of the mother is vastly improved. This harmony in the hormone balance of nursing mothers and the period of calm it imposes on the psychological structure is a priceless gift. You may have noted that despite being physically tired, nursing mothers are never ill-tempered. The reason for this is the harmonization of glandular secretions during nursing.

Thanks again to this hormonal balance, the womb and ovaries of the nursing mother are also afforded a period of rest. Although this period is not equal to the nursing period, a repose of two to six months is a very valuable rest in terms of the mother's sex organs. In the meantime, simple disorders of the womb and ovaries are also cured. Two years is, again, the ideal duration of the nursing period for these benefits derived by the mother from nursing to fully manifest themselves.

The crimes committed by atheistic medicine against mothers and babies, its disparagements and erroneous treatments will remain among the most shameful stains on the history of medicine.

The nursing mother is healthy, and the suckled baby is assured of a lifetime of health. These boons are, again, a great miracle of the Koran.

THE MIRACLE OF THE VIRGIN BIRTH

إِنَّ مَثَلَ عِيسَىٰ عِندَ اللَّهِ كَمَثَلِ آدَمَ خَلَقَهُ مِنْ

تُرَابٍ ثُمَّ قَالَ لَهُ كُنْ فَيَكُونُ ﴿٥٩﴾ (آل عمران ٣)

The likeness of Jesus in God's sight is as that of Adam; He created him soil, then said to him: 'Be', and he was.

The Miracle of the Virgin Birth

In accordance with the decrees of our exalted Book the Koran, every Moslem believes that Jesus was conceived without a father. This verse compares the birth of Jesus to the creation of Adam. Jesus was formed by the spirit breathed into Mary by God through the mediation of Gabriel. In other words, Jesus is not an outcome of two parents like other people, but the representative of a miraculous conception achieved by Mary without the contribution of a father.

In the 19th Century, materialism erupted in Europe and attacked all spiritual values, and it also denied the miracle of Jesus' immaculate conception, making it the object of derision. Even the principle, "self-reproduction cannot occur" instilled in biology, had the abuse of Jesus as its aim.

It is customary for atheists to reach such erroneous conclusions on the basis of premature and incomplete discoveries in biology. They have even, at the outset of the 20th Century, projected African man as a "savage, sub-human life form" on the basis solely of the tales of vagrant adventurers without even so much as an on-site inspection, whereas investigations in the 1960's have proved that

African man was a product of the disintegration of a great civilization in the south Saharan-Central African region, and that those who went south reverted to primitive stage, i.e. evolution, contrived as a basis for Marxist sociology, has once again been put to shame.

We must understand modern human biology profoundly if we are to comprehend the miracle of Jesus' fatherless birth. In rational science, three kinds of judgment can be foreseen. The phenomenon under investigation is either impossible from the standpoint of rational science, or it is certain, or else it is possible. All three of these outcomes are dependent on the capital available to rational science in any particular age. Physics textbooks written in the early years of the 20th Century, for example, shared the conviction that sound waves and images could not be transmitted without cables or similar material media. This has proved to be false, as our radio TV sets amply demonstrate.

Modern biology is well acquainted with the formation and development of the embryo. What is the phenomenon of conception, the basis of reproduction? How does it take place? We have to know the answers to these questions first; otherwise, we cannot make judgments about the birth of any being, let alone that of Jesus.

Multicellular organisms are characterized by tissue systems, and among them man, all reproduce via special reproductive cells. But the billions of cells of a human being all bear the genetic code of man in large measure. Have you ever wondered why the chromosomes in the nucleus of a skin or stomach cell are there in the first place? And why a human being needs the separate functions of different cells in order to reproduce?

The genetic code is indeed recorded in the nucleus of a cell taken from the human skin. This cell, however, cannot form a new human being. The cell reproduces if it becomes necessary to complete the tissue after an injury, but it gives rise to other skin cells, not a human being. The reproductive cells of a human being, on the other hand, still lack the capability to form a man in spite of their more complete possession of the code. They can only combine with other codes destined to come from the opposite sex and form a new human being in the seclusion of a womb. Contemporary biologists are wondering whether this principle is a great law of creation prohibiting the duplication of a human being, and are conducting research as to whether a male or female human being can be duplicated by cloning his/her own cells. A team of biologists at Cambridge University have claimed that they have been able to induce the genetic phase in a cell taken from the intestine of frog, i.e. that they have realized the conditions necessary for reproducing the frog from this cell. This very controversial experiment and others of its kind are the subject of research in many biological laboratories. The earlier attempts of some religious men of science to induce conception in female hamsters by gamma rays without mating are also biological researches that cannot be ignored.

We may simplify this complex subject as follows. The cells of a human being contain his genetic code. No cell has the ability to unlock this code and to produce a new human being. Only the sexual cells are created in a way that allows the code to be deciphered. The preparatory phase of these cells prior to reproduction is, however, interesting in the extreme. If we take the reproductive cell of a woman (a very large cell called the ovum), it is surrounded by rich chemical substances which have yet to be completely identified. Every woman carries approximately 400 of these cells,

which are ready for action by the time she reaches puberty. Each one of these cells has been created with great care, for their number represents an astoundingly low amount in terms of cellular biology. Each month, one of these cells is slightly modified and ejected into the pelvic cavity within a complicated hormonal process, and admitted into the Fallopian tubes via the oviducts.; The modification phase mentioned above is the virtual slicing in two of these cells. As these cells or ova are activated to form a new human being, their genetic codes are sliced in two, and they become ready to accept the other half of the code from the father. This biological tradition has a history as long as humanity's. The birth of a new being is thus delivered out of man's own biological will, whatever that may be, and brought entirely under the disposal of God. If things had been otherwise, that is, if the ovum of a woman with the ability to reproduce had fallen into the womb and formed a baby on its own, the physical and biological constitution of the mother would have been repeated indefinitely, and there would have been no place for new faces or new beauty. It is due to this subtle wisdom that although the mother's ovum possesses the ability to form a child entirely independently, it has been divested of this particular capacity. The real miracle, then, is not fatherless conception as such, but rather the imperative to bear children with a father.

In light of the above biological facts, the claim of a scientist to the effect that Jesus' immaculate conception is impossible is tantamount to a confession that he does not know biology. Direct and special intervention by the Lord Almighty is required, however, for the ovum to unravel its own code and to proceed with reproduction to finally yield a human being. In the Chapter 'Mary', the Koran expresses this subtlety as a scientific miracle of the highest order. Gabriel's irradiation of Mary or influencing her by some

unknown magnetic means is an expression of this fact. Otherwise the Lord would have said, "I willed it and created Jesus in Mary's womb." The declaration of a special intervention of the Lord with Gabriel as the intermediary emphasizes this fact of biology.

What is being performed in laboratories today in research by believing and unbelieving scientists alike points towards the witting or unwitting vindication of this verse. Radiation is commonly used in laboratory studies aiming to decipher the codes both of arbitrary cells and of ova and to form new organisms from them. It will not be possible, of course, for man to imitate the birth of Jesus by taking this miracle as a cue. All this research, however, reveals that the scientific miracle of Koranic verses, and hence the mystery of Jesus' fatherless birth, is at least partially explicable. Those who yesterday implied that "there can be no son without a father" with regard to Jesus are today working in laboratories to create just such fatherless children because they believe it to be possible. The mystery of Jesus will not be repeated in the laboratories. But ask those who disbelieve that Jesus lacked a father: "Why, then, are you investigating the possibility of creating a new organism in laboratories by opening the lock we call the chalon in the ovum?"

God Almighty has not only given expression to the subtleties of human biology listed above by creating Jesus in this fashion; He has also reminded us of the divine essence of man, which finds expression in the verse: "*I breathed into him of My own spirit*" (15:29, 38:72).

GOD ALMIGHTY IS THE SPEAKER OF TRUTH.

The Glorious Koran, the Holy Book of Islam, is unlike any other sacred scripture in the world: It is the Constitution of the universe. As such, any attempt to discover scientific truth will approximate the Koran more closely and more accurately the more profound it becomes. Since the Koran is itself Truth, the range of meanings that each word of the Koran provides defines the limits within which any truth may be found as its subject. Each age and each stage of scientific truth highlights a different interpretation of the Koran from among the ensemble of all possible interpretations.

In this widely acclaimed book, oncologist Dr. Haluk Nurbaki selects fifty verses from the Koran for comparison with the latest discoveries of modern science.

With ease and alacrity, Dr. Nurbaki demonstrates how each verse sheds light on not merely one but several aspects of modern science. This book is a resounding refutation of claims to the effect that science and religion are in irreconcilable antagonism. It is a book to read, to treasure, and to return to again and again.